221 p.

[redacted]

NASA Technical Paper 2336

August 1984

Supersonic, Nonlinear, Attached-Flow Wing Design for High Lift With Experimental Validation

James L. Pittman,
David S. Miller,
and William H. Mason

NASA
Technical
Paper
2336

1984

Supersonic, Nonlinear, Attached-Flow Wing Design for High Lift With Experimental Validation

James L. Pittman
and David S. Miller
Langley Research Center
Hampton, Virginia

William H. Mason
Grumman Aerospace Corporation
Bethpage, New York

[redacted]

National Aeronautics
and Space Administration

**Scientific and Technical
Information Branch**

CONTENTS

PRECEDING PAGE BLANK NOT FILMED

INTRODUCTION

The interest in advanced tactical aircraft designed for efficient cruise and maneuver at supersonic speeds has highlighted the limitations of supersonic linear theory. The linear theory is well suited to slender transport configurations which satisfy the thin-wing and small-disturbance assumptions of the method. However, at supersonic speeds, the tactical-aircraft characteristics of low fineness ratio, rounded-wing leading edges, and moderate wing sweep, which result in transonic Mach numbers normal to the wing leading edge, present a formidable challenge to the linear-theory methods. Perhaps the most demanding problem occurs for the high-lift conditions required for supersonic maneuver.

Basically, two approaches are available for the design of wings to produce low drag due to lift at high-lift conditions. One approach, which has been demonstrated experimentally at subsonic speeds, is to use a sharp leading-edge flap to produce separated flow and maintain a leading-edge vortex which provides vortex lift and some effective leading-edge suction. The second approach is to provide an attached-flow, controlled expansion around the leading edge of the wing. This latter approach is the subject of this report.

To produce high lift with attached flow at supersonic speeds, the flow must accelerate to conditions at which the cross-flow velocity is supercritical. The basic idea is to generate high levels of lift using the low pressures resulting from the upper-surface supercritical cross flow while minimizing drag by avoiding large pressure gradients which separate the flow and by avoiding strong shocks which result in energy losses. The concept of controlling this supercritical cross flow at supersonic speeds (ref. 1) is a natural extension of the well-understood concepts developed for supercritical airfoils at transonic speeds.

In order to accurately analyze and/or design wings with supercritical cross flow, it was necessary to have a computer code capable of accurately and efficiently analyzing highly nonlinear supersonic flows. To meet these requirements, the development of a series of full-potential supersonic flow codes (refs. 2 to 6) has been an integral part of developing the wing-design concept. Initially, a conically cambered wing was designed using the conical nonlinear potential code. This conical-wing experiment proved that the high-lift, supercritical-cross-flow wing-design concept was valid and that the recompression of the supercritical cross flow could be controlled to avoid boundary-layer separation (refs. 7 and 8). Subsequently, a three-dimensional cambered wing representative of wing planforms resulting from advanced tactical-fighter studies (ref. 9) was designed using the three-dimensional nonlinear full-potential code (NCOREL, ref. 6).

The purpose of this paper is to present results of the experimental validation for the three-dimensional cambered wing which was designed to achieve attached supercritical cross flow for lifting conditions typical of supersonic maneuver. The design point was a lift coefficient of 0.4 at Mach 1.62 and 12° angle of attack. Results from the nonlinear full-potential method are presented to show the validity of the design process along with results from linear-theory codes. Longitudinal force and moment data and static-pressure data were obtained in the Langley Unitary Plan Wind Tunnel (ref. 10) at Mach numbers of 1.58, 1.62, 1.66, 1.70, and 2.00 over

an angle-of-attack range of 0° to 14° at a Reynolds number of 2.0×10^6 per foot. Oil-flow photographs of the upper surface were obtained at $M = 1.62$ for $\alpha \approx 8°$, 10°, 12°, and 14°.

SYMBOLS

The moment reference point is 16.701 in. behind the model apex on the centerline and 0.275 in. below the model reference line. Symbols in parentheses are used in some appendix tables and figures.

a		speed of sound
b		span, 29.396 in.
c		local chord
$\bar{c}$		reference chord for pitching-moment calculations, 14.747 in.
C_A	(CA)	axial-force coefficient with chamber axial force removed, $\frac{\text{Axial force}}{q_\infty S}$
	(CAC)	axial-force coefficient due to the model balance housing chamber
C_D	(CD)	drag coefficient with chamber drag removed, $\frac{\text{Drag}}{q_\infty S}$
ΔC_D		incremental drag-due-to-lift coefficient, $C_D - C_{D,o}$
	(CDC)	drag coefficient due to model balance housing chamber
$C_{D,o}$		drag coefficient at zero lift
$C_{D,wave}$		volumetric wave drag for an uncambered wing at $\alpha = 0°$
C_f		skin-friction drag coefficient
C_L	(CL)	lift coefficient, $\frac{\text{Lift}}{q_\infty S}$
C_m	(CM)	pitching-moment coefficient, $\frac{\text{Pitching moment}}{q_B S\bar{c}}$
C_N	(CN)	normal-force coefficient, $\frac{\text{Normal force}}{q_\infty S}$
C_p	(CP)	pressure coefficient, $\frac{p - p_B}{q_B}$

c_{root}		root chord length, 23.84 in.
DR		spherical marching-step size in NCOREL
L/D		lift-drag ratio
LE		leading edge
M	(MACH)	free-stream Mach number
M_c		cross-flow Mach number, $\sqrt{\frac{v^2 + w^2}{a^2}}$
M_n		Mach number normal to leading edge, $M \cos \Lambda$
p	(P)	local static pressure
p_o	(PO)	free-stream stagnation pressure
p_∞		free-stream static pressure
q_∞	(Q)	free-stream dynamic pressure
R		free-stream Reynolds number, per foot
r		wing leading-edge radius
S		reference wing area, 342.11 in^2
T_o		free-stream stagnation temperature
v		lateral perturbation velocity component
w		vertical perturbation velocity component
x	(X)	longitudinal distance measured from model apex, in.
y	(Y)	spanwise distance measured from model centerline, in.
z		vertical distance measured from model reference plane, positive up, in.
α	(ALPHA)	angle of attack, deg
α_0		angle of attack at zero lift, deg
β		$= \sqrt{M^2 - 1}$
δ_f		angle between horizontal and circular-arc camber line at wing leading edge (see fig. 4)
η	(ETA)	local nondimensionalized spanwise coordinate, $\frac{y}{y_{LE}}$

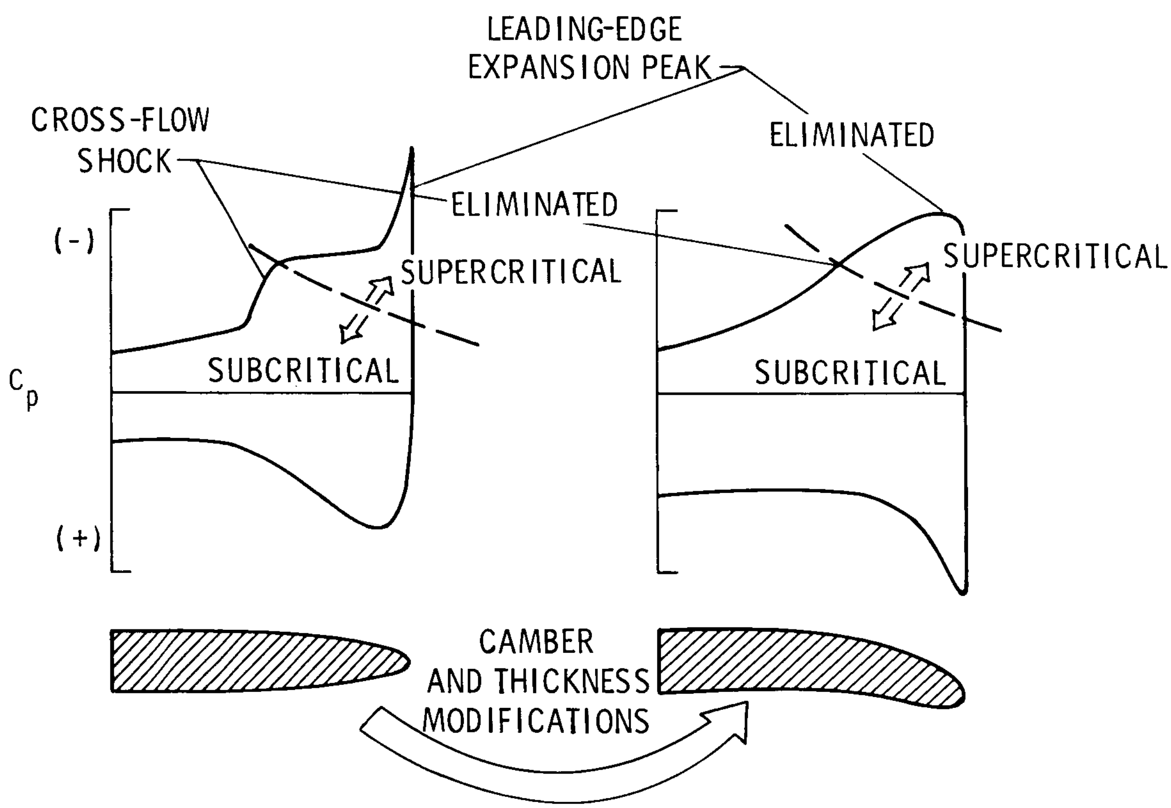
θ_T	streamwise airfoil twist angle, deg (see fig. 5)
Λ	leading-edge sweep angle, deg

Subscripts:

scp	supercritical panel
LE	leading edge
TE	trailing edge

AERODYNAMIC DESIGN

The left-hand side of the following sketch illustrates the typical high-lift pressure distribution on an uncambered spanwise wing section with a rounded leading edge. The right-hand side shows the desirable pressure distribution of a properly shaped wing section. The proper camber and thickness eliminates the leading-edge expansion peak and reduces the strength of the cross-flow shock. The resultant upper-surface pressure distribution features both a supercritical cross-flow region ($M_c > 1$) and a subcritical cross-flow region ($M_c < 1$). The attached supercritical-cross-flow concept attempts to maintain attached flow so that the drag reduction



created by the pressure expansion on the rounded leading edge and on the forward-facing upper-surface slopes can be used to improve the wing performance.

Design conditions of $M = 1.62$ and $C_L = 0.4$ were chosen as representative of future tactical-aircraft maneuver conditions. The wing planform selected for investigation (fig. 1) was derived from an advanced tactical-fighter study (ref. 9). The basic leading-edge sweep angle was 57°, which corresponds to $b \cot G = 0.83$ and $M_n = 0.88$ at the design Mach number. Inboard of about 44 percent semispan, the wing was blended into a 65° leading-edge sweep angle. The outboard trailing-edge sweep angle was 33°, which blended into an 11° trailing-edge sweep angle inboard of about 54 percent semispan.

Given the design conditions and wing planform, the aerodynamic design problem is to specify a target pressure distribution and define a wing camber and thickness shape which generates the target pressure distribution. To aid in obtaining a target pressure distribution, a procedure for assessing the effect of variations in the size of the supercritical cross-flow region and in the pressure level for that supercritical cross-flow region was developed using a modified linear-theory code described in reference 11. This procedure allows the specification of a conical region of supercritical cross flow of arbitrary size and pressure level near the wing leading edge. In the presence of these supercritical panel pressures, the subcritical wing pressures are then determined to minimize the drag due to lift of the entire wing for the specified Mach number and lift coefficient. The results of a typical design exercise are shown in figure 2. Each curve in the figure represents a different size (denoted by η_{scp}) of the supercritical panel; the variation of drag due to lift is shown for supercritical-panel pressure levels $\Delta C_{p,scp}$ ranging from 0.42 to 0.52. The chosen target is less than 5 percent above the minimum drag level and represents a pressure level and size for the supercritical cross flow which is intuitively felt to be attainable in the real flow.

The wing-design target pressure distribution must make the transition from supercritical to subcritical cross-flow conditions, and it is desirable for this transition to occur isentropically (shockless). If, however, shocks cannot be avoided, their strengths should be controlled to maintain low wave drag and not separate the flow. According to two-dimensional experimental data summarized in reference 12, shocks which produce static-pressure increases of less than 50 percent will not cause flow separation; therefore, in this wing design, all shock-produced static-pressure jumps were kept below 25 percent.

The specification of an airfoil to produce the target pressure distribution was accomplished by using the nonlinear flow method of reference 6 (NCOREL) to design by iteration. The computer code solves the supersonic, full-potential equation using the exact surface boundary conditions. Therefore, the method treats the surface shape instead of computing thickness and camber effects independently. It also provides accurate information at the leading edge, which is in contrast to the state-of-the-art linear potential theory. As a means of simplifying the airfoil development, the thickness envelope is generated first, and then the camber surface is generated.

The wing leading-edge geometry was found to be critically important in attached-flow, high-lift design. The leading-edge radius is required to be large, by conventional supersonic wing-design standards, to prevent flow separation on the highly

loaded leading edge. A modified NACA four-digit thickness distribution was selected because the leading-edge radius can be easily varied using analytic equations which define the thickness distribution. The airfoil thickness shape selected corresponds to a leading-edge radius distribution shown in figure 3 with the maximum thickness ratio of 4 percent located at 40 percent of local chord.

Once the airfoil thickness envelope was established, a systematic means of developing the camber surface was employed. An analytic description of the wing was obtained by superimposing the following three basic camber elements: spanwise circular-arc camber, dihedral, and twist. These three basic camber elements were systematically varied to obtain the spanwise target pressure distribution at five longitudinal control stations; the control stations were arbitrarily selected to be at 5, 10, 15, 20, and 25 in. aft of the wing apex. This procedure resulted in a dihedral angle of 10°, a longitudinal distribution of circular-arc camber (fig. 4), and a spanwise distribution of twist (fig. 5). In addition to these three basic camber elements, two local camber modifications were made. The primary local modification was to add a spanwise bump to reduce the upper-surface curvature; this change was added conically. The second local modification was to increase the leading-edge camber forward of the "leading-edge-device" hinge line shown in figure 1. This additional leading-edge camber varied linearly from a value of 0° at the inboard edge of the leading-edge device (43-percent span location) to a value of 5° (positive leading edge down) at the wing tip. These camber elements constitute the basic cambered wing. An alternate leading edge was designed to be identical to the basic wing, except that the local leading-edge camber added at the tip was changed from 5° to -2°.

The final step in the design process was to add a balance housing to the completed wing geometry. The balance-housing size was minimized to provide the minimum flow distortion to the wing flow field. The balance housing was faired smoothly into the wing, both longitudinally and laterally. The final wing design was carried out with the balance housing in the computational model.

WIND-TUNNEL MODEL

An isolated wing model was sized to fit the Langley Unitary Plan Wind Tunnel. The large size of the model helped to achieve surface tolerances of ±0.001 in. on the leading edge and ±0.005 in. over the main portion of the model. The wind-tunnel model was constructed of aluminum. In table I, the model coordinates for the wing with the basic leading edge are given in the format of reference 13. The coordinates of the model with the alternate leading edge are presented in table II. A steel adapter was constructed to affix the internally mounted strain-gage balance to the model and orifices for 100 pressure taps were also installed in the model. The locations of these pressure taps are listed in table III.

TEST INFORMATION

These tests were conducted in the low Mach number test section of the Langley Unitary Plan Wind Tunnel, which is a variable Mach number, variable-pressure, continuous-flow, supersonic tunnel. The test section is approximately 4.0 ft by 4.0 ft. (See ref. 10 for a more detailed description of this facility.) Figure 6 is a photograph of the model installed in the wind tunnel.

Tests were conducted at the following nominal test conditions:

M	p_o, psf	p_∞, psf	q_∞, psf	T_o, °F	R, per foot
1.58	1072	260	454	125	2.0×10^6
1.62	1085	248	455	125	2.0×10^6
1.66	1099	237	456	125	2.0×10^6
1.70	1113	226	456	125	2.0×10^6
2.00	1254	160	449	125	2.0×10^6

To ensure fully turbulent boundary-layer flow over the model, transition strips composed of No. 60 carborundum grit were sprinkled on the upper and lower model surface 0.4 in. behind the model leading edge (measured streamwise). The transition strips were about 0.125 in. wide. The size and location of the transition strips were determined by the method of reference 14.

Angle of attack ranged from approximately 0° to 14°, but most of the pressure data were taken between approximately 6° and 14°, inclusive. The measured angle of attack was corrected for tunnel-flow angularity and for the deflection of the balance and sting under load. Flow-angle corrections were determined by testing the wing in both upright and inverted orientations. Pressure data were obtained from six 48-port scanning valves mounted outside the tunnel.

After completing the pressure test, the pressure instrumentation was removed and force tests were conducted on the same model. Forces and moments acting on the model were measured by means of a six-component strain-gage balance contained within the model. The balance was connected through a supporting sting to the model support system of the wind tunnel. Two balance-chamber pressure measurements were made throughout the force program, and the average of the two chamber pressures was applied to the model base area to correct the axial force to a condition of free-stream static pressure on the base. After completing the force test, oil-flow photographs of the wing upper surface were taken at $M = 1.62$ for $\alpha \approx 8°$, 10°, 12°, and 14°.

DISCUSSION OF RESULTS

The pressure data are discussed first, followed by a discussion of the force and moment data. The experimental data used in this discussion are limited to those needed for discussion purposes; however, complete plotted and tabulated experimental data are presented in appendixes A and B. The associated nonlinear potential-theory estimates are for a 57 × 57 grid and a 1-in. marching step. An assessment of the effect of grid density and marching-step size on the accuracy and computer execution time of the nonlinear potential-theory estimates is the subject of appendix C.

Pressure Results

All pressure results are presented as spanwise distributions of pressure coefficients. A detailed discussion of the basic leading-edge results is followed by a briefer discussion of alternate leading-edge results.

Basic Leading Edge

For the design conditions of $\alpha = 12°$ and $M = 1.62$, the effects of perturbations in angle of attack and in Mach number are presented in figures 7 and 8, respectively.

Effect of angle of attack.- Mach 1.62 pressure coefficient results are shown in figure 7 for the design angle of attack ($\approx 12°$) and for angles of attack approximately 2° below and above the design. Both experimentally measured pressures and theoretically predicted (NCOREL) pressures are presented for longitudinal stations of 10.6, 15.5, 19.9, and 24.4 in. in figures 7(a) to 7(d). Because the theoretically predicted pressures represent the goal of the wing-design effort, the quality of the agreement between theory and experiment is a validation of the nonlinear potential method for this application.

Both the experimental and theoretical data show that pressures across the entire wing are significantly influenced by changes in angle of attack; however, the lower-surface pressures exhibit changes only in magnitude, whereas the upper-surface pressures exhibit changes in both magnitude and in the character of the pressure distribution.

The lower-surface pressure coefficients increase in magnitude with increasing angle of attack, as expected, and the quality of the agreement between NCOREL predicted values and experimentally measured values is approximately the same for all three angles of attack. At the longitudinal station of $x = 10.6$, the lower-surface experimental pressure coefficients are somewhat larger than the NCOREL values with a maximum error of about 10 percent. However, the agreement at $x = 15.5$, 19.9, and 24.4 is virtually identical. At $x = 24.4$, the most inboard lower-surface pressures are predicted higher than the experimental pressures because of a limitation in the NCOREL code, which presently must represent the wing wake as a thin, solid-surface extension of the trailing edge.

On the upper surface of the wing, one effect of increasing angle of attack is to decrease the pressure, and this effect is most pronounced in the highly nonlinear expansion region near the leading edge. Increasing angle of attack can also change the character of the pressure distribution, and this is best illustrated by the experimental results at $x = 19.9$ shown in figure 7(c). At the smallest angle of attack ($\alpha = 9.92°$), the pressure distribution shows a well-behaved expansion outboard of $\eta \approx 0.85$ followed immediately by a subcritical-type (isentropic) pressure recovery inboard. When the angle of attack is increased to a value of 11.93°, a stronger expansion occurs closer to the leading edge, and a constant-pressure plateau of supercritical cross flow develops between η values of 0.90 and 0.75. On the inboard side, the pressure plateau terminates with a rapid pressure recompression; this recompression indicates the presence of a cross-flow shock. As the angle of attack is further increased to 13.92°, the magnitude of the pressure plateau increases, the extent of the plateau increases, and the cross-flow shock moves inboard with increased strength.

The agreement between experimental and predicted (NCOREL) upper-surface pressures is best in the leading-edge expansion region, with small differences being noted for the last two longitudinal stations. At these last two stations, the wing leading-edge radii are small, and it is possible that rotational and/or viscous effects, which are not accounted for in the nonlinear potential theory, are influencing the flow. Additionally, at $x = 24.4$, the leading-edge expansion peak, which

occurs for all three angles of attack, is possibly related to inadequate mesh resolution around the leading edge. (See appendix C.) The most notable differences between experimental and theoretical upper-surface pressures occur at the cross-flow shock, where the potential-flow theory underestimates the cross-flow shock strength. This error continues into the subcritical region. During the wing design, it was recognized that the isentropic assumptions of the theoretical method would predict slightly weaker shock jumps, and this was taken into consideration by imposing more stringent limits on the allowable shock strengths.

At the design angle of attack ($\alpha \approx 12°$), the agreement between measured and predicted (NCOREL) pressures indicates that the overall design-goal pressure distributions were experimentally obtained at all four longitudinal stations. Furthermore, this good agreement implies that no flow separation due to either the leading-edge expansion or the recompression of the cross flow is present. The oil-flow photographs, which are discussed subsequently, also support this view.

Effect of Mach number.- Experimental pressure coefficient results for four Mach numbers at the design angle of attack ($\alpha \approx 12°$) are shown in figure 8 along with theoretical (NCOREL) estimates. The experimental data show that the basic nature of the flow does not change for perturbations about the design Mach number, and that the effects of Mach number are generally confined to the supercritical cross-flow region near the leading edge on the upper surface. The magnitude of the expansion pressures decrease with increasing Mach number, which is the proper trend. Also, the trends of the experimental data are accurately predicted by the theoretical (NCOREL) estimates.

Linear-theory analysis.- Experimental pressure coefficient data at the design condition ($M = 1.62$ and $\alpha = 12°$), and at angles of attack 2° above and below the design, are repeated in figure 9 along with theoretical pressure-coefficient estimates from a modified Woodward supersonic linear-theory analysis method (ref. 11) which includes thickness effects. Near the leading edge, the large pressure gradients and extremely low pressures estimated by linear theory show the dramatic effect of the subsonic leading-edge singularity. Also, the linear-theory method cannot be used to calculate shocks, so the supercritical-subcritical nature of the upper-surface flow is not shown. Comparisons of the experimental and linear-theory pressures illustrate the inability of linear theory to produce any meaningful information on the upper-surface pressure distributions resulting from supercritical cross flow about wings.

Alternate Leading Edge

The alternate leading edge has less leading-edge camber than the basic leading edge, and, as discussed in the section entitled "Aerodynamic Design," the camber differences are largest at the wing-tip leading edge. These leading-edge camber differences are reflected in the spanwise pressure distributions shown in figure 10. In this figure, experimental and theoretical pressures are shown for both leading-edge geometries at the design conditions of $M = 1.62$ and $\alpha \approx 12°$. The geometry is identical for each leading edge between the wing apex and the $x = 10.6$ position, and this is reflected in the identical pressure distributions of figure 10(a). The reduced camber of the alternate leading-edge results in the lower leading-edge expansion pressures as shown in figures 10(b) to 10(d). In general, the quality of the agreement between experiment and theory is the same for the alternate leading edge as was previously found for the basic leading edge; the most noticeable difference in agreement between experiment and theory occurs at the $x = 24.4$ station, where the large-expansion pressure peak predicted is not experimentally measured.

Force and Moment Results

Basic Leading Edge

Longitudinal force and moment data are presented in figure 11 for the design Mach number of 1.62. In addition to the experimental data, predicted results from the nonlinear potential method (NCOREL, ref. 6) and from the linear potential-flow method (ref. 11) are also shown. The NCOREL estimates of lift and drag include an axial-force contribution due to skin friction ($C_f = 0.0069$ at $M = 1.62$), which was obtained from the method of reference 15. The skin-friction contribution is assumed to be invariant with angle of attack. The linear potential-flow drag estimate is the sum of the drag due to lift from the method of reference 11, the far-field wave drag obtained for an uncambered wing with the same thickness using the method of reference 16, and the skin-friction drag from the method of reference 15.

The experimental lift and moment data in figure 11 are linear with angle of attack through about 9° or 10°. Above this angle of attack, the lift-curve slope and the moment-curve slope decrease. In general, the experimental force and moment data and the NCOREL calculations agree well; however, small differences between these results occur at the higher angles of attack. These differences seem to be traceable to the disparity between the calculated and experimentally measured cross-flow shock strength; specifically, this disparity would cause an overestimation of the lift and a consequent overestimation of the drag and a more nose-down pitching moment, since the affected portion of the wing is generally aft of the moment reference point. These trends can be seen in figure 11.

The linear potential-theory estimates are also included in figure 11. The linear theory overpredicts C_L, C_D, and longitudinal stability. The linear-theory estimates would be somewhat worse had not the vacuum limit been artificially imposed in the computer code. It is informative to relate these linear-theory force and moment estimates to the pressure estimates shown in figure 9; the force and moment results are much more accurate than the pressure data might suggest. Also, calculation by the nonlinear potential method yields a lower C_D than the linear potential method, and the more optimistic nonlinear drag value is supported by the experimental data.

Figure 11(c) presents the drag polar for the experimental data and the two potential theories along with an experimentally-derived polar for the equivalent flat plate. The equivalent-flat-plate polar, which is calculated from the equation $C_D = C_{D,o} + C_L \tan(\alpha - \alpha_0)$, does not include leading-edge thrust and is taken as the lower bound on wing performance. At the design C_L of 0.4, the cambered wing shows a 21-percent decrease in drag due to lift compared with the equivalent flat wing. Figure 11(c) illustrates that the application of this technology to advanced aircraft could provide significant benefits for supersonic maneuvering. Also, the linear-theory drag polar is optimistic in the high-lift-coefficient range.

Since the wing leading edge was rounded, which is in contrast to the sharp leading edges of typical supersonic wings, it was suspected that the small-disturbance assumptions of the far-field wave-drag prediction method might be violated locally and that the calculated wave-drag values should be used with caution. To gain further insight into this matter, volumetric wave-drag estimates for an equivalent uncambered wing were calculated using the nonlinear potential code (NCOREL), the linear-theory near-field method (ref. 11), and the far-field wave-drag method. A comparison of the three different wave-drag estimates is shown in figure 12; however, since an uncambered version of the cambered wing was not constructed, no experimental

data are available. At the design Mach number of 1.62, the far-field wave drag is about 20 percent higher than that predicted by the NCOREL code, and this difference is reflected in the predicted zero-lift drag values shown in figure 12. The near-field wave-drag estimate is totally erroneous, apparently because of an inaccuracy in the computation of the longitudinal perturbational velocity component at the leading edge of the wing. The NCOREL wave-drag estimates are not affected by Mach cone limitations.

The loss in experimentally measured lift and pitching moment, which was previously noted at $\alpha \approx 9°$ or $10°$ in the discussion of figure 11, coincides with the development of trailing-edge separation which was observed in oil-flow patterns. Oil-flow photographs for 8°, 10°, 12°, and 14° angle of attack are shown in figure 13. The photograph at $\alpha = 8°$ indicates that smooth, attached flow exists everywhere on the wing with the exception of a very small region of separated flow at the wing-tip trailing-edge location. At $\alpha = 10°$, the flow pattern changed only slightly, but the separated region on the outboard portion of the wing trailing edge enlarged, and a new region of incipient wing trailing-edge separation formed inboard. At $\alpha = 12°$, the smoothly turning flow behind the wing leading edge was replaced by a "scalloped" pattern, which possibly indicates the presence of a cross-flow shock. At this larger angle of attack, the trailing-edge separation regions were enlarged. At $\alpha = 14°$, the scalloped leading-edge pattern moved forward toward the wing apex, and virtually the entire trailing edge of the wing separated.

The onset of trailing-edge flow separation has been correlated with a criterion presented in reference 12. This criterion relates the minimum pressure coefficient allowable for attached flow at the trailing edge to the free-stream Mach number and trailing-edge sweep angle. This trailing-edge criterion is shown in figure 14. The experimentally measured plateau pressure coefficient for three angles of attack is shown on the left-hand side of the figure. It is also shown in figure 14 that the onset of trailing-edge separation as shown in the oil-flow photographs of figure 13 correlates well with the empirically determined criterion for the present condition of $M = 1.62$ and a trailing-edge sweep angle of 33°.

Alternate Leading Edge

Longitudinal force and moment data are presented in figure 15 for the basic and alternate leading-edge configurations at the design Mach number of 1.62. At 12° design angle of attack, there is no significant difference in the forces and moments produced by the two configurations; a close examination of the tabulated data indicates that the basic leading-edge configuration has perhaps two counts less drag than the alternate leading-edge configuration.

The most significant difference between the two configurations is shown in figure 15(b), where the alternate leading-edge wing produces the lower drag at low lift coefficients and produces the higher maximum lift-drag ratio. Both these differences are a direct result of the reduced camber drag for the alternate leading-edge configuration compared with the basic leading-edge configuration.

CONCLUDING REMARKS

The experimental results of this report represent a verification of a design procedure for efficient, high-lift wings at a supersonic design point where Mach number is 1.62, angle of attack is 12°, and lift coefficient is 0.4. Efficient high

lift is achieved by maintaining attached supercritical cross flow over a major portion of the wing and then recompressing to subcritical cross-flow conditions through a controlled cross-flow shock. This process does not create boundary-layer separation. The actual design process, which relies upon nonlinear potential-flow methods, is described in detail, and the comparisons with experimental surface-pressure data and longitudinal force and moment data confirm the accuracy of the design method.

Results are presented which show that design conditions of Mach number and angle of attack could be varied slightly without changing the desired flow structure and that the nonlinear potential method could accurately predict the change in pressure and forces caused by these variations. A disparity between the experimental cross-flow shock strength and the calculated isentropic cross-flow shock strength at Mach 1.62 is shown in the pressure comparisons, and that disparity produced a small overestimation of lift and drag at the higher angles of attack and higher levels of longitudinal stability than those measured. Further comparisons of the experimental data at Mach 1.62 were made with linear-theory estimated results. The poor quality of the linear potential-theory pressure estimates was noted, but the integrated force comparisons were more accurate than the pressure results might indicate. These comparisons showed that linear theory is useful as a preliminary performance analysis tool but that stability and design studies require a more sophisticated approach for the conditions of this study. Oil-flow photographs at Mach 1.62 showed a region of trailing-edge separation at high angles of attack, and the experimental pressure data were correlated with a trailing-edge separation criterion. This correlation showed that the onset of trailing-edge separation was predictable and could be controlled through planform, camber surface, angle of attack, Mach number, or a combination of these parameters. The overall efficiency of the wing was quantified at the design Mach number (1.62) by comparing the experimentally measured drag polar with the equivalent flat-plate drag polar (0 percent leading-edge thrust). At the design lift coefficient (0.4), the attached-flow, cambered-wing concept showed a 21-percent performance improvement relative to the equivalent flat wing.

Langley Research Center
National Aeronautics and Space Administration
Hampton, VA 23665
June 25, 1984

REFERENCES

1. Mason, W. H.; and DaForno, G.: Opportunities for Supersonic Performance Gains Through Non-Linear Aerodynamics. AIAA Paper 79-1527, July 1979.

2. Grossman, B.: A Numerical Procedure for the Computation of Supersonic Conical Flows. AIAA Paper 78-1213, July 1978.

3. Grossman, B.; and Siclari, M. J.: The Nonlinear Supersonic Potential Flow Over Delta Wings. AIAA-80-0269, Jan. 1980.

4. Siclari, M. J.: Supersonic Nonlinear Potential Flows With Subsonic Regions and Implicit Isentropic Shock Fitting. AIAA-81-1202, June 1981.

5. Siclari, M. J.: Computation of Nonlinear Supersonic Potential Flow Over Three Dimensional Surfaces. AIAA-82-0167, Jan. 1982.

6. Siclari, Michael J.: The NCOREL Computer Program for 3D Nonlinear Supersonic Potential Flow Computations. NASA CR-3694, 1983.

7. Mason, W. H.; and Miller, D. S.: Controlled Supercritical Crossflow on Supersonic Wings - An Experimental Validation. AIAA-80-1421, July 1980.

8. Miller, David S.; Landrum, Emma Jean; Townsend, James C.; and Mason, William H.: Pressure and Force Data for a Flat Wing and a Warped Conical Wing Having a Shockless Recompression at Mach 1.62. NASA TP-1759, 1981.

9. Bavitz, Paul C.: The Impact of Technology and Combat Role on Advanced Fighter Concepts. Tactical Aircraft Research and Technology, Volume I, NASA CP-2162, Part 2, 1981, pp. 857-875.

10. Jackson, Charlie M., Jr.; Corlett, William A.; and Monta, William J.: Description and Calibration of the Langley Unitary Plan Wind Tunnel. NASA TP-1905, 1981.

11. Mason, William H.; and Rosen, Bruce S.: The COREL and W12SC3 Computer Programs for Supersonic Wing Design and Analysis. NASA CR-3676, 1983.

12. Kulfan, R. M.; and Sigalla, A.: Real Flow Limitations in Supersonic Airplane Design. AIAA Paper 78-147, Jan. 1978.

13. Craidon, Charlotte B.: A Computer Program for Fitting Smooth Surfaces to an Aircraft Configuration and Other Three-Dimensional Geometries. NASA TM X-3206, 1975.

14. Braslow, Albert L.; Hicks, Raymond M.; and Harris, Roy V., Jr.: Use of Grit-Type Boundary-Layer-Transition Trips on Wind-Tunnel Models. Conference on Aircraft Aerodynamics, NASA SP-124, 1966, pp. 19-36. (Also available as NASA TN D-3579.)

15. Sommer, Simon C.; and Short, Barbara J.: Free-Flight Measurements of Turbulent-Boundary-Layer Skin Friction in the Presence of Severe Aerodynamic Heating at Mach Numbers From 2.8 to 7.0. NACA TN 3391, 1955.

16. Harris, Roy V., Jr.: An Analysis and Correlation of Aircraft Wave Drag. NASA TM X-947, 1964.

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE I.- NUMERICAL DESCRIPTION OF WING WITH BASIC LEADING EDGE IN FORMAT OF REFERENCE 13

```
 1  1   0   0   0   0   0 20 30
342.11
 0.0     0.147   0.586   1.317   2.338   3.645   5.235   7.102   9.242 11.649
14.314 17.231  20.391  23.784  27.400  31.230  35.261  39.483  43.881  48.445
53.159 58.011  62.986  68.070  73.247  78.503  83.822  89.188  94.586100.000
-.0000 0.0000  0.000023.8401
 .5361   .2500 -.061023.3542
1.0721   .5000 -.114622.8683
1.6586   .7735 -.165622.3368
2.1443 1.0000  -.202221.8967
3.3172 1.5471  -.272320.8337
4.9747 2.3206  -.334119.3316
6.6296 3.0941  -.361617.8324
8.2769 3.8676  -.363716.3414
9.9052 4.6412  -.348414.8713
11.4905 5.4147 -.323313.4495
13.0004 6.1882 -.295512.1174
14.4102 6.9617 -.278110.9171
15.7250 7.7353 -.2864  9.8686
16.9739 8.5088 -.2616  8.9614
19.387810.0558 -.2230  7.4226
21.773911.6029 -.2164  6.0212
22.965312.3764 -.2192  5.3314
25.357313.9235 -.2459  3.9456
27.500014.6970 -.1566  2.3063
0.0000   .0004   .0013   .0030   .0056   .0097   .0155   .0234   .0336   .0451
 .0556   .0617   .0595   .0458   .0187  -.0196  -.0640  -.1085  -.1477  -.1769
-.1938  -.1997  -.2000  -.2000  -.2000  -.2000  -.2000  -.2000  -.2000  -.2000
0.0000   .0089   .0281   .0500   .0697   .0843   .0929   .0990   .1078   .1188
 .1309   .1426   .1478   .1397   .1128   .0604   .0002  -.0528  -.0938  -.1208
-.1349  -.1389  -.1390  -.1390  -.1390  -.1390  -.1390  -.1390  -.1390  -.1390
0.0000   .0088   .0308   .0587   .0890   .1181   .1430   .1627   .1767   .1868
 .1978   .2086   .2178   .2227   .2139   .1871   .1380   .0642   .0033  -.0355
-.0556  -.0630  -.0673  -.0720  -.0764  -.0805  -.0836  -.0852  -.0854  -.0854
0.0000   .0085   .0310   .0615   .0962   .1328   .1684   .2006   .2279   .2500
 .2665   .2782   .2879   .2954   .3003   .2964   .2787   .2472   .2074   .1695
 .1443   .1329   .1227   .1109   .0981   .0846   .0707   .0566   .0427   .0291
0.0000   .0082   .0304   .0618   .0983   .1379   .1785   .2176   .2531   .2840
 .3098   .3304   .3455   .3564   .3640   .3691   .3694   .3592   .3437   .3295
 .3211   .3166   .3110   .3038   .2954   .2876   .2809   .2759   .2729   .2724
0.0000   .0074   .0281   .0593   .0972   .1396   .1851   .2323   .2793   .3245
 .3662   .4037   .4365   .4647   .4880   .5061   .5200   .5303   .5377   .5428
 .5462   .5480   .5488   .5488   .5482   .5473   .5461   .5448   .5431   .5413
0.0000   .0063   .0247   .0533   .0898   .1317   .1777   .2269   .2783   .3310
 .3834   .4344   .4827   .5276   .5685   .6054   .6381   .6669   .6909   .7101
 .7250   .7360   .7436   .7484   .7511   .7521   .7521   .7517   .7509   .7500
0.0000   .0055   .0214   .0469   .0802   .1196   .1635   .2109   .2613   .3140
 .3684   .4235   .4784   .5321   .5838   .6329   .6788   .7214   .7603   .7953
```

TABLE I.- Continued

.8262	.8516	.8715	.8865	.8974	.9050	.9104	.9142	.9166	.9181
0.0000	.0047	.0185	.0408	.0706	.1064	.1471	.1913	.2388	.2889
.3414	.3959	.4516	.5081	.5645	.6202	.6744	.7265	.7757	.8212
.8625	.8993	.9315	.9589	.9810	.9989	1.0135	1.0251	1.0344	1.0416
0.0000	.0041	.0160	.0355	.0618	.0939	.1308	.1715	.2154	.2622
.3115	.3633	.4172	.4729	.5300	.5877	.6453	.7019	.7564	.8080
.8559	.8996	.9390	.9740	1.0053	1.0337	1.0590	1.0807	1.0992	1.1149
0.0000	.0035	.0140	.0310	.0542	.0829	.1162	.1535	.1940	.2373
.2832	.3317	.3826	.4357	.4907	.5470	.6038	.6603	.7156	.7689
.8193	.8665	.9101	.9505	.9881	1.0230	1.0552	1.0848	1.1119	1.1367
0.0000	.0031	.0123	.0275	.0482	.0739	.1041	.1382	.1755	.2155
.2580	.3029	.3500	.3992	.4502	.5026	.5557	.6090	.6618	.7134
.7633	.8109	.8565	.9003	.9421	.9816	1.0189	1.0539	1.0866	1.1170
0.0000	.0026	.0105	.0235	.0413	.0636	.0902	.1235	.1613	.2015
.2423	.2832	.3260	.3704	.4163	.4635	.5116	.5601	.6086	.6566
.7037	.7505	.7966	.8417	.8855	.9278	.9683	1.0070	1.0438	1.0786
0.0000	.0031	.0123	.0276	.0487	.0750	.1057	.1396	.1758	.2132
.2507	.2876	.3257	.3650	.4056	.4472	.4897	.5327	.5760	.6199
.6644	.7093	.7541	.7987	.8425	.8855	.9274	.9679	1.0069	1.0444
0.0000	.0029	.0114	.0253	.0443	.0677	.0950	.1253	.1578	.1916
.2257	.2593	.2926	.3270	.3622	.3983	.4351	.4731	.5125	.5529
.5942	.6361	.6784	.7209	.7632	.8051	.8463	.8868	.9262	.9644
0.0000	.0021	.0085	.0188	.0330	.0506	.0712	.0942	.1192	.1458
.1734	.2015	.2294	.2568	.2848	.3139	.3441	.3753	.4074	.4405
.4744	.5090	.5443	.5800	.6161	.6523	.6886	.7247	.7605	.7958
0.0000	.0016	.0064	.0144	.0253	.0390	.0552	.0738	.0942	.1163
.1396	.1638	.1885	.2132	.2375	.2613	.2854	.3101	.3354	.3612
.3876	.4145	.4419	.4696	.4977	.5260	.5545	.5831	.6117	.6401
0.0000	.0014	.0056	.0124	.0219	.0338	.0480	.0642	.0822	.1018
.1226	.1443	.1667	.1894	.2120	.2344	.2561	.2777	.2997	.3221
.3449	.3681	.3916	.4154	.4394	.4636	.4879	.5124	.5368	.5612
0.0000	.0010	.0038	.0085	.0151	.0233	.0332	.0446	.0574	.0714
.0864	.1024	.1192	.1365	.1543	.1723	.1904	.2085	.2262	.2434
.2597	.2760	.2924	.3088	.3253	.3419	.3584	.3749	.3914	.4078
0.0000	.0004	.0016	.0036	.0064	.0100	.0144	.0195	.0253	.0318
.0389	.0467	.0551	.0640	.0734	.0833	.0936	.1043	.1154	.1267
.1355	.1444	.1533	.1624	.1715	.1806	.1898	.1990	.2082	.2173
0.0000	.1754	.3478	.5140	.6731	.8247	.9685	1.1040	1.2306	1.3504
1.4699	1.5984	1.7456	1.9194	2.1241	2.3657	2.6435	2.9410	3.2265	3.4611
3.6107	3.6668	3.6703	3.6703	3.6703	3.6703	3.6703	3.6703	3.6703	3.6703
0.0000	.1970	.3848	.5641	.7347	.8964	1.0490	1.1901	1.3160	1.4293
1.5316	1.6241	1.7281	1.8668	2.0608	2.3371	2.6295	2.9241	3.2000	3.4203
3.5500	3.5895	3.5905	3.5905	3.5905	3.5905	3.5905	3.5905	3.5905	3.5905
0.0000	.2068	.4019	.5862	.7596	.9221	1.0740	1.2153	1.3464	1.4662
1.5719	1.6652	1.7474	1.8270	1.9418	2.1104	2.3536	2.6842	2.9554	3.1410
3.2305	3.2378	3.2188	3.1986	3.1790	3.1615	3.1479	3.1406	3.1400	3.1400
0.0000	.2170	.4198	.6093	.7856	.9490	1.1001	1.2393	1.3673	1.4846
1.5912	1.6872	1.7710	1.8431	1.9034	1.9797	2.0955	2.2516	2.4219	2.5595
2.6139	2.5854	2.5357	2.4819	2.4246	2.3642	2.3018	2.2389	2.1766	2.1157

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE I.- Concluded

0.0000	.2252	.4340	.6277	.8063	.9704	1.1208	1.2584	1.3839	1.4982
1.6018	1.6950	1.7777	1.8496	1.9095	1.9560	2.0017	2.0715	2.1403	2.1761
2.1575	2.0921	2.0017	1.8880	1.7520	1.6007	1.4359	1.2580	1.0670	.8622
0.0000	.2435	.4659	.6688	.8527	1.0184	1.1674	1.3011	1.4212	1.5290
1.6257	1.7122	1.7891	1.8561	1.9126	1.9571	1.9872	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9336	.6668	.3720	.0497
0.0000	.2660	.5053	.7197	.9099	1.0776	1.2249	1.3539	1.4672	1.5669
1.6551	1.7335	1.8031	1.8642	1.9165	1.9584	1.9874	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	.2847	.5380	.7618	.9574	1.1268	1.2726	1.3977	1.5053	1.5984
1.6795	1.7511	1.8147	1.8710	1.9198	1.9596	1.9876	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	.2996	.5640	.7953	.9951	1.1658	1.3105	1.4325	1.5356	1.6234
1.6989	1.7651	1.8239	1.8763	1.9223	1.9604	1.9878	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	.3106	.5832	.8201	1.0231	1.1947	1.3385	1.4583	1.5581	1.6419
1.7133	1.7754	1.8307	1.8803	1.9242	1.9611	1.9879	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	.3178	.5957	.8362	1.0412	1.2135	1.3568	1.4750	1.5727	1.6539
1.7226	1.7822	1.8351	1.8829	1.9255	1.9615	1.9879	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	.3211	.6015	.8437	1.0496	1.2222	1.3652	1.4828	1.5794	1.6595
1.7269	1.7853	1.8372	1.8841	1.9260	1.9617	1.9880	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	.3213	.6019	.8443	1.0503	1.2229	1.3659	1.4834	1.5799	1.6599
1.7273	1.7855	1.8373	1.8841	1.9261	1.9617	1.9880	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	.3213	.6019	.8443	1.0503	1.2229	1.3659	1.4834	1.5799	1.6599
1.7273	1.7855	1.8373	1.8841	1.9261	1.9617	1.9880	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	.3213	.6019	.8443	1.0503	1.2229	1.3659	1.4834	1.5799	1.6599
1.7273	1.7855	1.8373	1.8841	1.9261	1.9617	1.9880	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	.3213	.6019	.8443	1.0503	1.2229	1.3659	1.4834	1.5799	1.6599
1.7273	1.7855	1.8373	1.8841	1.9261	1.9617	1.9880	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	.3213	.6019	.8443	1.0503	1.2229	1.3659	1.4834	1.5799	1.6599
1.7273	1.7855	1.8373	1.8841	1.9261	1.9617	1.9880	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	.3213	.6019	.8443	1.0503	1.2229	1.3659	1.4834	1.5799	1.6599
1.7273	1.7855	1.8373	1.8841	1.9261	1.9617	1.9880	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	.3213	.6019	.8443	1.0503	1.2229	1.3659	1.4834	1.5799	1.6599
1.7273	1.7855	1.8373	1.8841	1.9261	1.9617	1.9880	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE II.- NUMERICAL DESCRIPTION OF WING WITH ALTERNATE LEADING EDGE IN FORMAT OF REFERENCE 13

```
  1  1  0  0  0  0  0 20 30
 342.11
  0.0     0.147   0.586   1.317   2.338   3.645   5.235   7.102   9.242  11.649
 14.314  17.231  20.391  23.784  27.400  31.230  35.261  39.483  43.881  48.445
 53.159  58.011  62.986  68.070  73.247  78.503  83.822  89.188  94.586100.000
 -.0000 0.0000 0.000023.8401
  .5361   .2500 -.061023.3542
 1.0721   .5000 -.114622.8683
 1.6586   .7735 -.165622.3368
 2.1443 1.0000 -.202221.8967
 3.3172 1.5471 -.272320.8337
 4.9747 2.3206 -.334119.3316
 6.6296 3.0941 -.361617.8324
 8.2769 3.8676 -.363716.3414
 9.9052 4.6412 -.348414.8713
11.4905 5.4147 -.323313.4495
13.0004 6.1882 -.295512.1174
14.4102 6.9617 -.267010.9171
15.7250 7.7353 -.2293 9.8686
16.9739 8.5088 -.2024 8.9614
19.387810.0558 -.1599 7.4226
21.773911.6029 -.1525 6.0212
22.965312.3764 -.1641 5.3314
25.357313.9235 -.2238 3.9456
27.500014.6970 -.1561 2.3063
 0.0000   .0004   .0013   .0030   .0056   .0097   .0155   .0234   .0336   .0451
  .0556   .0617   .0595   .0458   .0187  -.0196  -.0640  -.1085  -.1477  -.1769
 -.1938  -.1997  -.2000  -.2000  -.2000  -.2000  -.2000  -.2000  -.2000  -.2000
 0.0000   .0089   .0281   .0500   .0697   .0843   .0929   .0990   .1078   .1188
  .1309   .1426   .1478   .1397   .1128   .0604   .0002  -.0528  -.0938  -.1208
 -.1349  -.1389  -.1390  -.1390  -.1390  -.1390  -.1390  -.1390  -.1390  -.1390
 0.0000   .0088   .0308   .0587   .0890   .1181   .1430   .1627   .1767   .1868
  .1978   .2086   .2178   .2227   .2139   .1871   .1380   .0642   .0033  -.0355
 -.0556  -.0630  -.0673  -.0720  -.0764  -.0805  -.0836  -.0852  -.0854  -.0854
 0.0000   .0085   .0310   .0615   .0962   .1328   .1684   .2006   .2279   .2500
  .2665   .2782   .2879   .2954   .3003   .2964   .2787   .2472   .2074   .1695
  .1443   .1329   .1227   .1109   .0981   .0846   .0707   .0566   .0427   .0291
 0.0000   .0082   .0304   .0618   .0983   .1379   .1785   .2176   .2531   .2840
  .3098   .3304   .3455   .3564   .3640   .3691   .3694   .3592   .3437   .3295
  .3211   .3166   .3110   .3038   .2954   .2876   .2809   .2759   .2729   .2724
 0.0000   .0074   .0281   .0593   .0972   .1396   .1851   .2323   .2793   .3245
  .3662   .4037   .4365   .4647   .4880   .5061   .5200   .5303   .5377   .5428
  .5462   .5480   .5488   .5488   .5482   .5473   .5461   .5448   .5431   .5413
 0.0000   .0063   .0247   .0533   .0898   .1317   .1777   .2269   .2783   .3310
  .3834   .4344   .4827   .5276   .5685   .6054   .6381   .6669   .6909   .7101
  .7250   .7360   .7436   .7484   .7511   .7521   .7521   .7517   .7509   .7500
 0.0000   .0055   .0214   .0469   .0802   .1196   .1635   .2109   .2613   .3140
  .3684   .4235   .4784   .5321   .5838   .6329   .6788   .7214   .7603   .7953
```

TABLE II.- Continued

.8262	.8516	.8715	.8865	.8974	.9050	.9104	.9142	.9166	.9181
0.0000	.0047	.0185	.0408	.0706	.1064	.1471	.1913	.2388	.2889
.3414	.3959	.4516	.5081	.5645	.6202	.6744	.7265	.7757	.8212
.8625	.8993	.9315	.9589	.9810	.9989	1.0135	1.0251	1.0344	1.0416
0.0000	.0041	.0160	.0355	.0618	.0939	.1308	.1715	.2154	.2622
.3115	.3633	.4172	.4729	.5300	.5877	.6453	.7019	.7564	.8080
.8559	.8996	.9390	.9740	1.0053	1.0337	1.0590	1.0807	1.0992	1.1149
0.0000	.0035	.0140	.0310	.0542	.0829	.1162	.1535	.1940	.2373
.2832	.3317	.3826	.4357	.4907	.5470	.6038	.6603	.7156	.7689
.8193	.8665	.9101	.9505	.9881	1.0230	1.0552	1.0848	1.1119	1.1367
0.0000	.0031	.0123	.0275	.0482	.0739	.1041	.1382	.1755	.2155
.2580	.3029	.3500	.3992	.4502	.5026	.5557	.6090	.6618	.7134
.7633	.8109	.8565	.9003	.9421	.9816	1.0189	1.0539	1.0866	1.1170
0.0000	.0028	.0112	.0250	.0439	.0675	.0952	.1254	.1581	.1933
.2314	.2722	.3149	.3594	.4053	.4525	.5005	.5491	.5975	.6456
.6927	.7395	.7855	.8306	.8745	.9167	.9573	.9960	1.0328	1.0676
0.0000	.0022	.0088	.0196	.0344	.0529	.0750	.1005	.1290	.1603
.1942	.2306	.2686	.3080	.3486	.3902	.4326	.4756	.5189	.5628
.6074	.6522	.6971	.7416	.7855	.8285	.8703	.9108	.9499	.9873
0.0000	.0019	.0074	.0167	.0294	.0455	.0647	.0868	.1117	.1390
.1685	.2001	.2334	.2677	.3030	.3391	.3759	.4139	.4532	.4937
.5350	.5769	.6192	.6617	.7040	.7459	.7871	.8276	.8670	.9052
0.0000	.0013	.0051	.0115	.0203	.0315	.0449	.0603	.0777	.0971
.1185	.1417	.1668	.1936	.2217	.2508	.2810	.3121	.3443	.3773
.4112	.4459	.4811	.5169	.5530	.5892	.6255	.6616	.6973	.7326
0.0000	.0009	.0037	.0083	.0147	.0230	.0330	.0448	.0585	.0738
.0909	.1096	.1298	.1513	.1740	.1974	.2215	.2462	.2715	.2973
.3237	.3506	.3779	.4057	.4338	.4621	.4906	.5192	.5478	.5762
0.0000	.0008	.0033	.0075	.0133	.0208	.0300	.0408	.0532	.0673
.0830	.1001	.1185	.1381	.1586	.1797	.2010	.2226	.2446	.2670
.2898	.3130	.3365	.3603	.3843	.4085	.4329	.4573	.4817	.5061
0.0000	.0007	.0030	.0067	.0119	.0185	.0265	.0359	.0467	.0587
.0718	.0861	.1013	.1173	.1341	.1513	.1689	.1866	.2042	.2213
.2376	.2538	.2702	.2867	.3032	.3197	.3363	.3528	.3692	.3856
0.0000	.0004	.0016	.0036	.0063	.0099	.0141	.0192	.0249	.0314
.0385	.0462	.0546	.0635	.0729	.0828	.0931	.1038	.1149	.1263
.1350	.1439	.1528	.1619	.1710	.1802	.1893	.1985	.2077	.2168
0.0000	.1754	.3478	.5140	.6731	.8247	.9685	1.1040	1.2306	1.3504
1.4699	1.5984	1.7456	1.9194	2.1241	2.3657	2.6435	2.9410	3.2265	3.4611
3.6107	3.6668	3.6703	3.6703	3.6703	3.6703	3.6703	3.6703	3.6703	3.6703
0.0000	.1970	.3848	.5641	.7347	.8964	1.0490	1.1901	1.3160	1.4293
1.5316	1.6241	1.7281	1.8668	2.0608	2.3371	2.6295	2.9241	3.2000	3.4203
3.5500	3.5895	3.5905	3.5905	3.5905	3.5905	3.5905	3.5905	3.5905	3.5905
0.0000	.2068	.4019	.5862	.7596	.9221	1.0740	1.2153	1.3464	1.4662
1.5719	1.6652	1.7474	1.8270	1.9418	2.1104	2.3536	2.6842	2.9554	3.1410
3.2305	3.2378	3.2188	3.1986	3.1790	3.1615	3.1479	3.1406	3.1400	3.1400
0.0000	.2170	.4198	.6093	.7856	.9490	1.1001	1.2393	1.3673	1.4846
1.5912	1.6872	1.7710	1.8431	1.9034	1.9797	2.0955	2.2516	2.4219	2.5595
2.6139	2.5854	2.5357	2.4819	2.4246	2.3642	2.3018	2.2389	2.1766	2.1157

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE II.- Concluded

0.0000	.2252	.4340	.6277	.8063	.9704	1.1208	1.2584	1.3839	1.4982
1.6018	1.6950	1.7777	1.8496	1.9095	1.9560	2.0017	2.0715	2.1403	2.1761
2.1575	2.0921	2.0017	1.8880	1.7520	1.6007	1.4359	1.2580	1.0670	.8622
0.0000	.2435	.4659	.6688	.8527	1.0184	1.1674	1.3011	1.4212	1.5290
1.6257	1.7122	1.7891	1.8561	1.9126	1.9571	1.9872	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9336	.6668	.3720	.0497
0.0000	.2660	.5053	.7197	.9099	1.0776	1.2249	1.3539	1.4672	1.5669
1.6551	1.7335	1.8031	1.8642	1.9165	1.9584	1.9874	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	.2847	.5380	.7618	.9574	1.1268	1.2726	1.3977	1.5053	1.5984
1.6795	1.7511	1.8147	1.8710	1.9198	1.9596	1.9876	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	.2996	.5640	.7953	.9951	1.1658	1.3105	1.4325	1.5356	1.6234
1.6989	1.7651	1.8239	1.8763	1.9223	1.9604	1.9878	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	.3106	.5832	.8201	1.0231	1.1947	1.3385	1.4583	1.5581	1.6419
1.7133	1.7754	1.8307	1.8803	1.9242	1.9611	1.9879	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	.3178	.5957	.8362	1.0412	1.2135	1.3568	1.4750	1.5727	1.6539
1.7226	1.7822	1.8351	1.8829	1.9255	1.9615	1.9879	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	.3211	.6015	.8437	1.0496	1.2222	1.3652	1.4828	1.5794	1.6595
1.7269	1.7853	1.3372	1.8841	1.9260	1.9617	1.9880	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	.3213	.6019	.8443	1.0503	1.2229	1.3659	1.4834	1.5799	1.6599
1.7273	1.7855	1.8373	1.8841	1.9261	1.9617	1.9880	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	.3213	.6019	.8443	1.0503	1.2229	1.3659	1.4834	1.5799	1.6599
1.7273	1.7855	1.8373	1.8841	1.9261	1.9617	1.9880	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	.3213	.6019	.8443	1.0503	1.2229	1.3659	1.4834	1.5799	1.6599
1.7273	1.7855	1.8373	1.8841	1.9261	1.9617	1.9880	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	.3213	.6019	.8443	1.0503	1.2229	1.3659	1.4834	1.5799	1.6599
1.7273	1.7855	1.8373	1.8841	1.9261	1.9617	1.9880	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	.3213	.6019	.8443	1.0503	1.2229	1.3659	1.4834	1.5799	1.6599
1.7273	1.7855	1.8373	1.8841	1.9261	1.9617	1.9880	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	.3213	.6019	.8443	1.0503	1.2229	1.3659	1.4834	1.5799	1.6599
1.7273	1.7855	1.8373	1.8841	1.9261	1.9617	1.9880	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	.3213	.6019	.8443	1.0503	1.2229	1.3659	1.4834	1.5799	1.6599
1.7273	1.7855	1.8373	1.8841	1.9261	1.9617	1.9880	1.9998	1.9912	1.9587
1.9002	1.8141	1.6990	1.5539	1.3781	1.1712	.9333	.6650	.3668	.0400
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE III.- PRESSURE ORIFICE LOCATIONS

x = 10.6, y_{LE} = 4.943		x = 15.5, y_{LE} = 7.528		x = 19.9, y_{LE} = 10.386		x = 24.4, y_{LE} = 13.308	
η	y	η	y	η	y	η	y
0.99	4.893	0.99	7.453	0.99	10.282	0.99	13.175
.95	4.696	.96	7.227	.96	9.970	.98	13.042
.88	4.350	.92	6.926	.92	9.555	.96	12.776
.78	3.855	.86	6.474	.88	9.140	.92	12.243
.64	3.163	.78	5.872	.84	8.724	.88	11.711
.52	[a]2.570	.72	5.420	.80	8.309	.84	11.179
.40	1.977	.66	4.968	.76	7.893	.80	10.646
		.60	4.517	.72	7.478	.76	10.114
		.54	4.065	.68	[a]7.062	.72	9.582
		.47	3.538	.64	6.647	.68	[a]9.049
		.40	3.011	.60	[a]6.232	.64	8.517
		.33	2.484	.56	5.816	.60	[a]7.985
				.52	[a]5.401	.56	7.453
				.48	4.985	.52	[a]6.920
				.44	[a]4.570	.48	6.388
				.40	4.154	.44	[a]5.855
				.30	3.116	.40	5.323
				.20	[b]2.077	.34	4.575

[a]Orifice located on upper surface only.
[b]Upper-surface tap failed during all tests, and no results are presented for this location.

ORIGINAL PAGE IS
OF POOR QUALITY

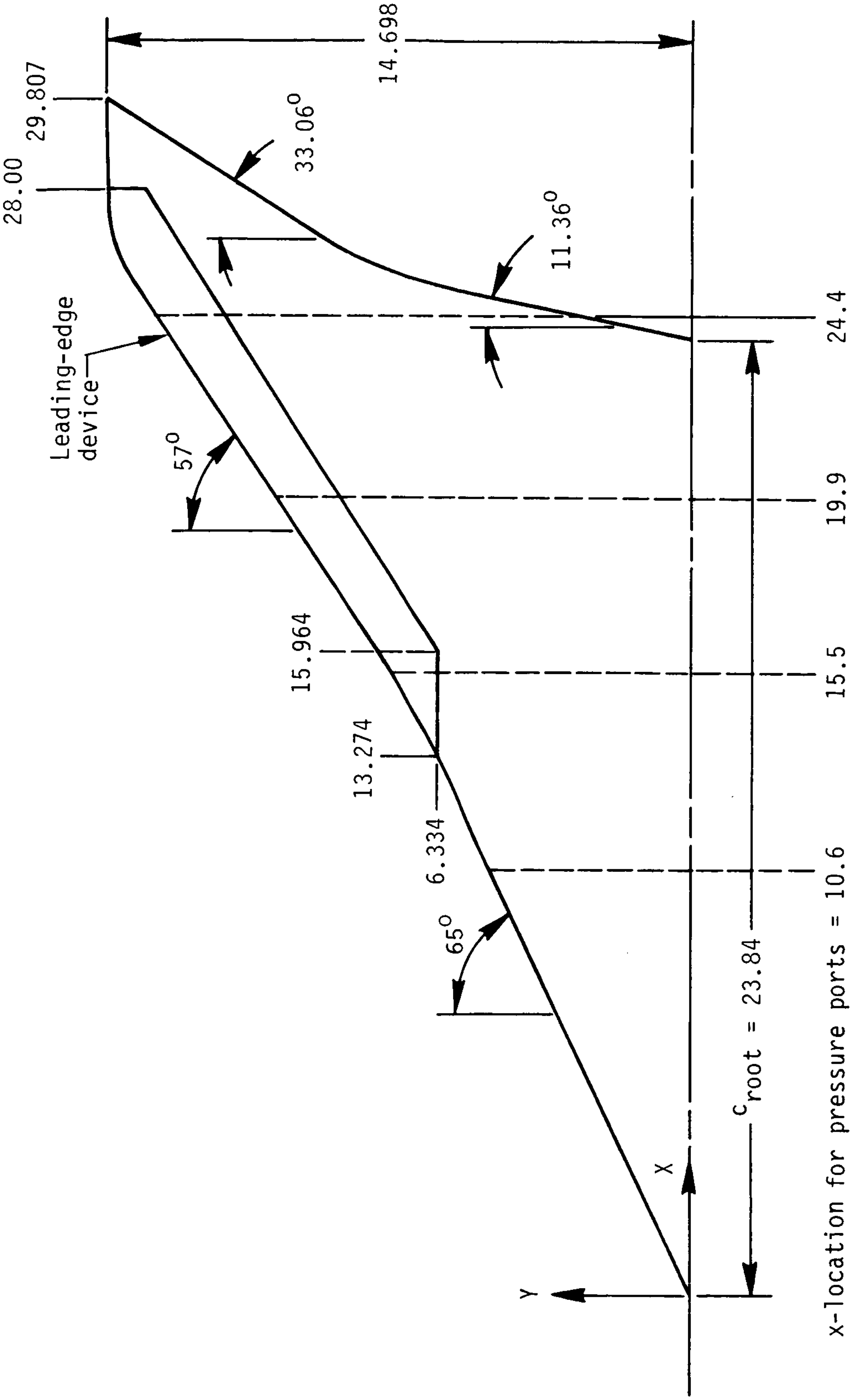


Figure 1.- Wing planform. (All linear dimensions are in inches.)

PRECEDING PAGE BLANK NOT FILMED

PAGE 22 INTENTIONALLY BLANK

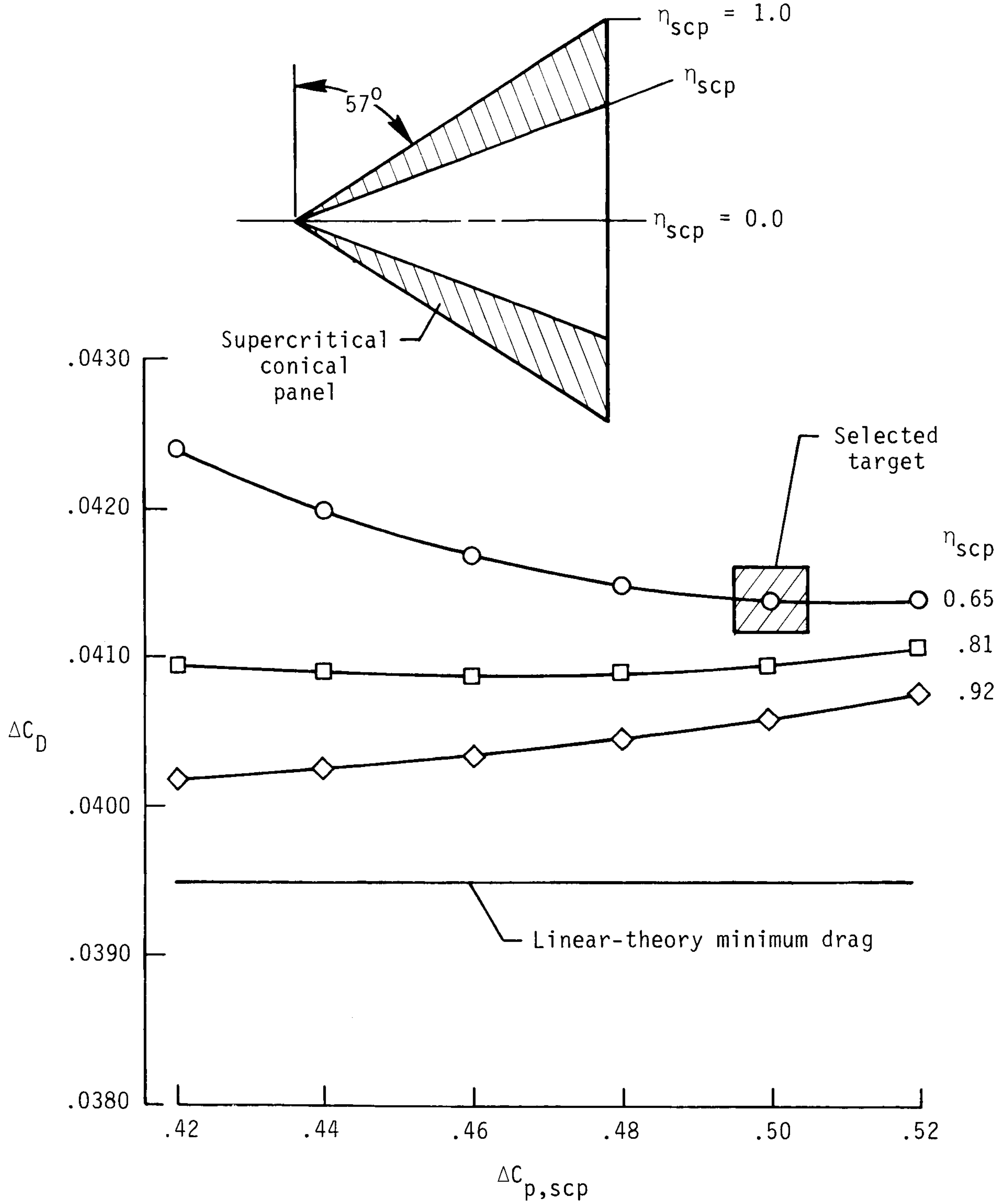


Figure 2.- Linear-theory optimization results for $M = 1.62$ and $C_L = 0.4$.

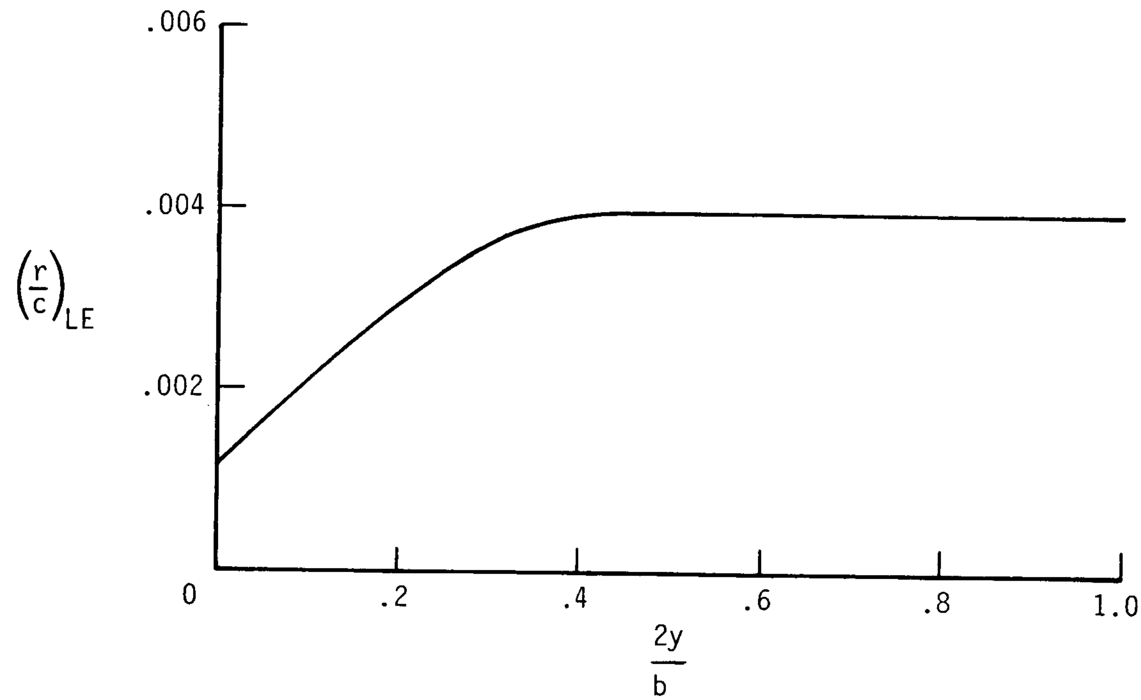


Figure 3.- Leading-edge radius distribution.

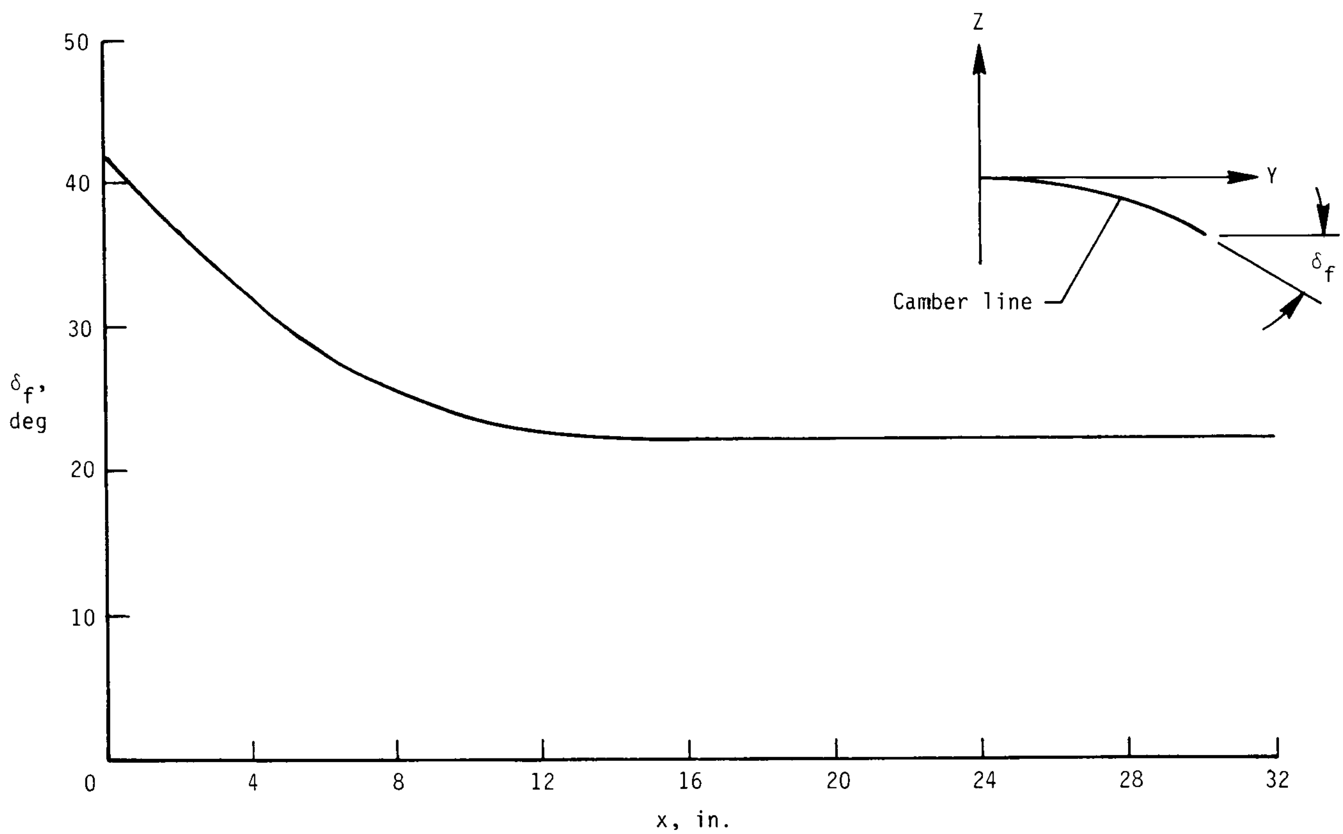


Figure 4.- Axial variation of circular-arc camber.

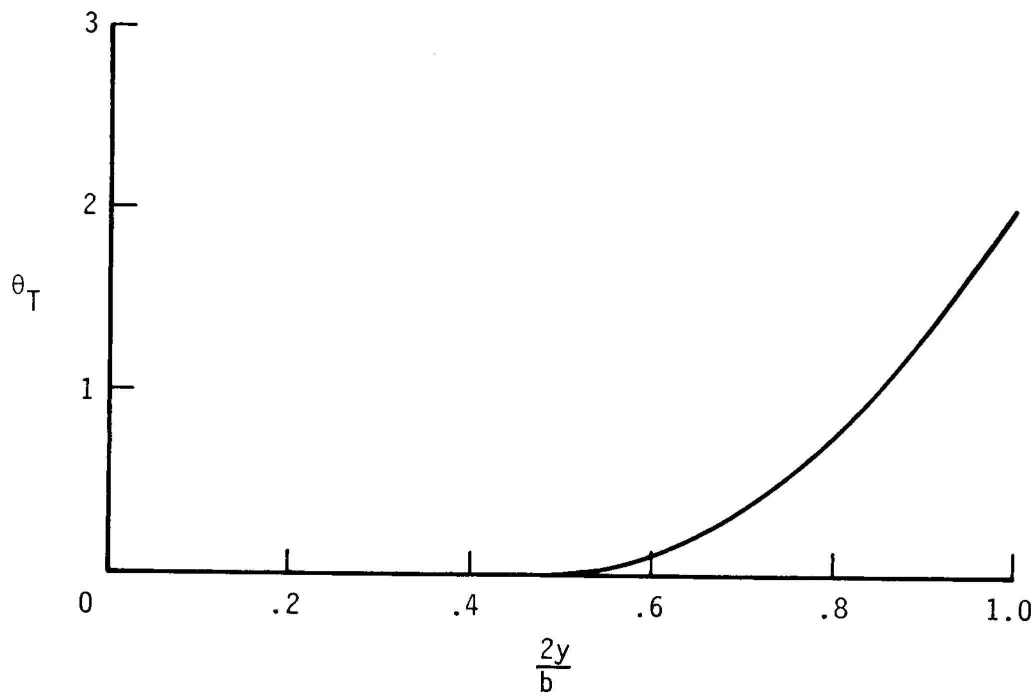
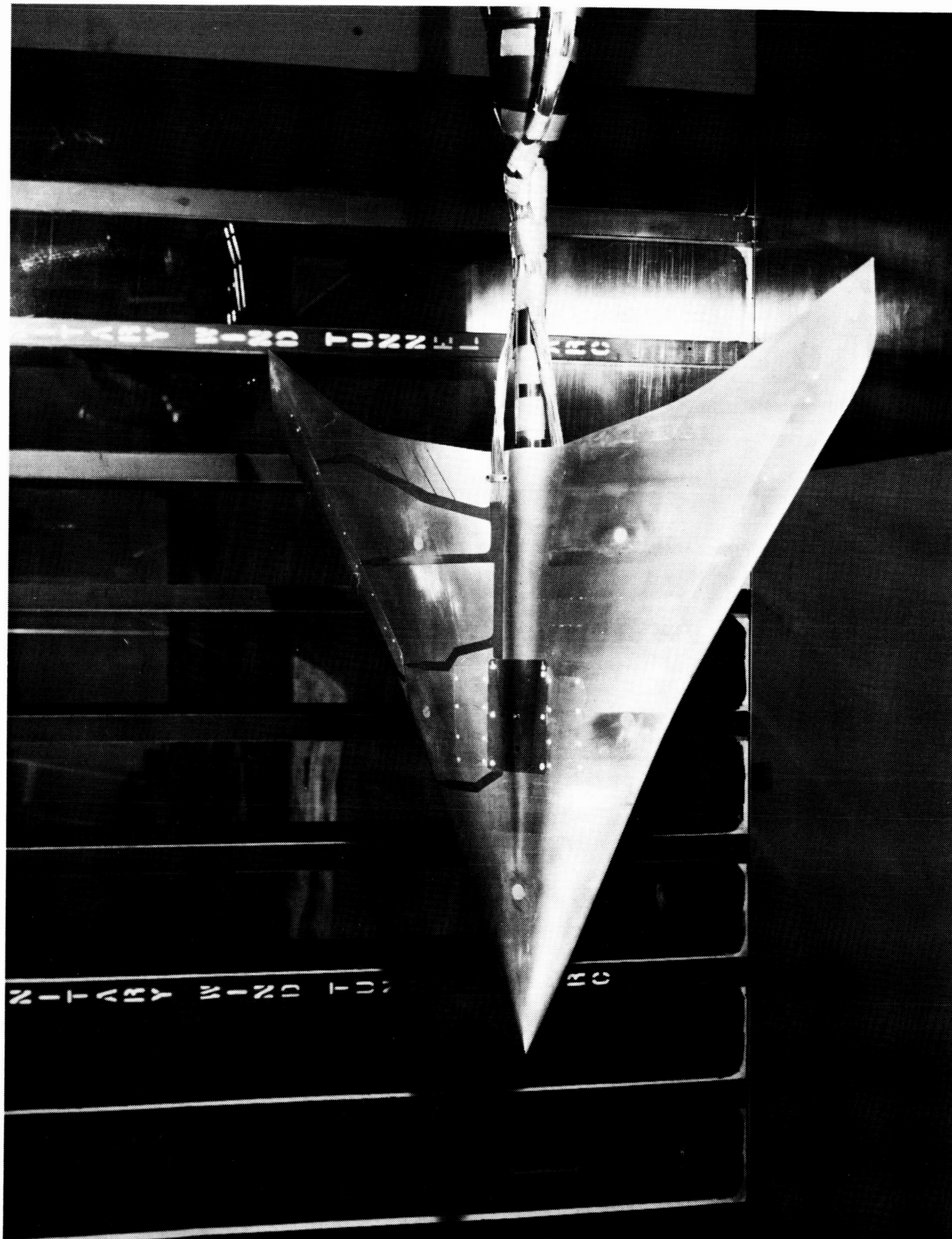


Figure 5.- Spanwise distribution of twist.

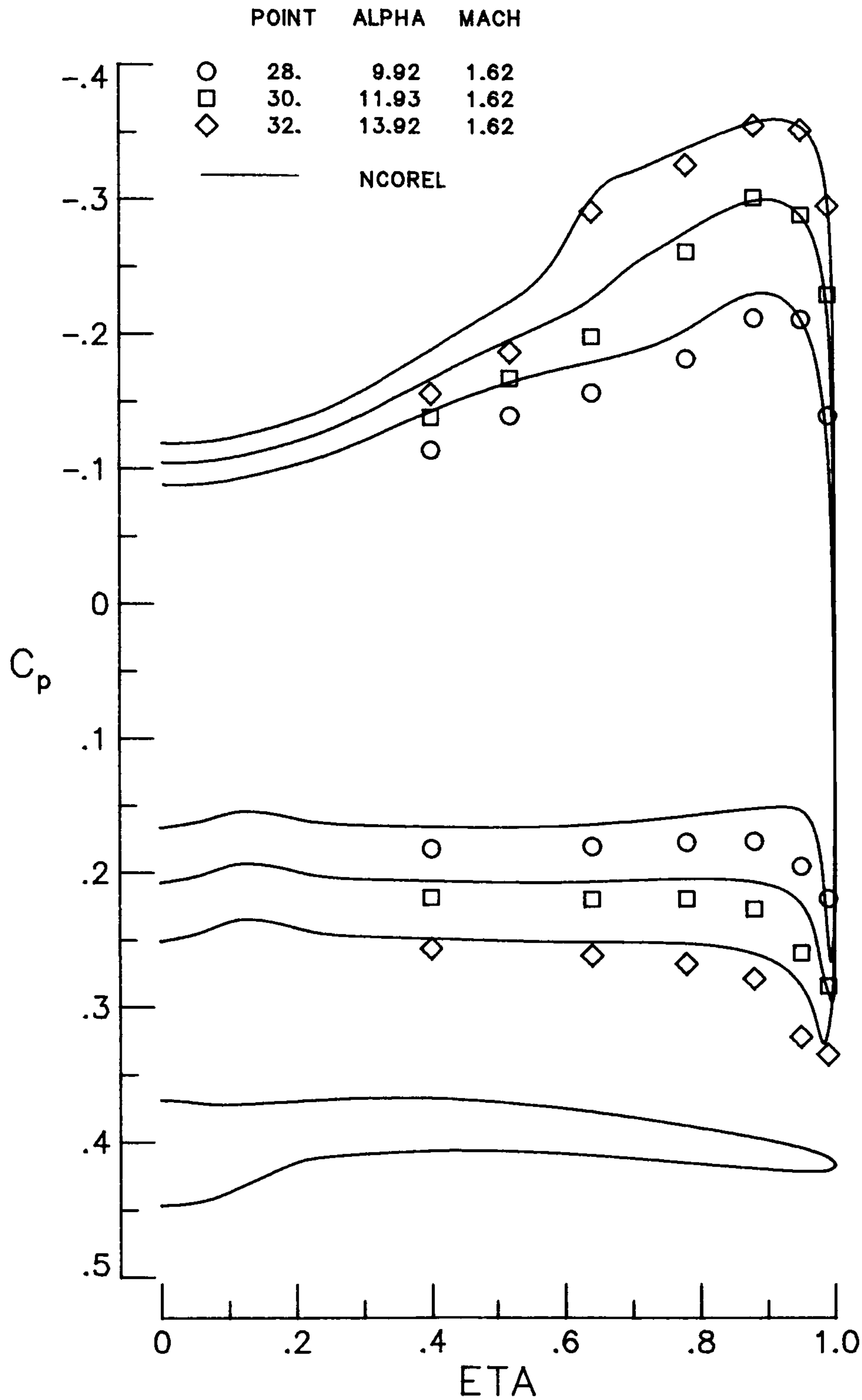
ORIGINAL PAGE IS
OF POOR QUALITY



L-82-2451

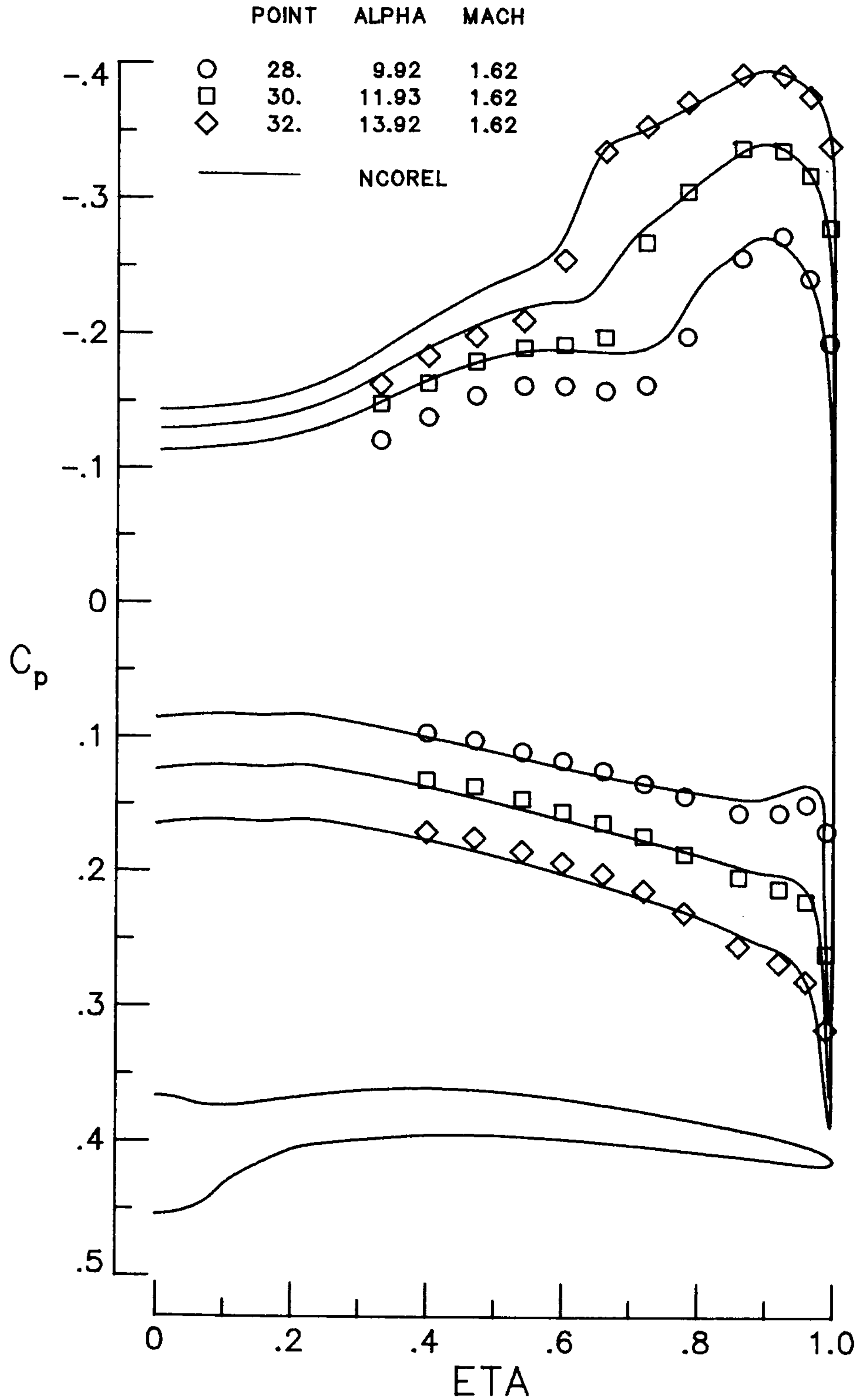
Figure 6.- Model installed in wind tunnel.

ORIGINAL PAGE IS
OF POOR QUALITY



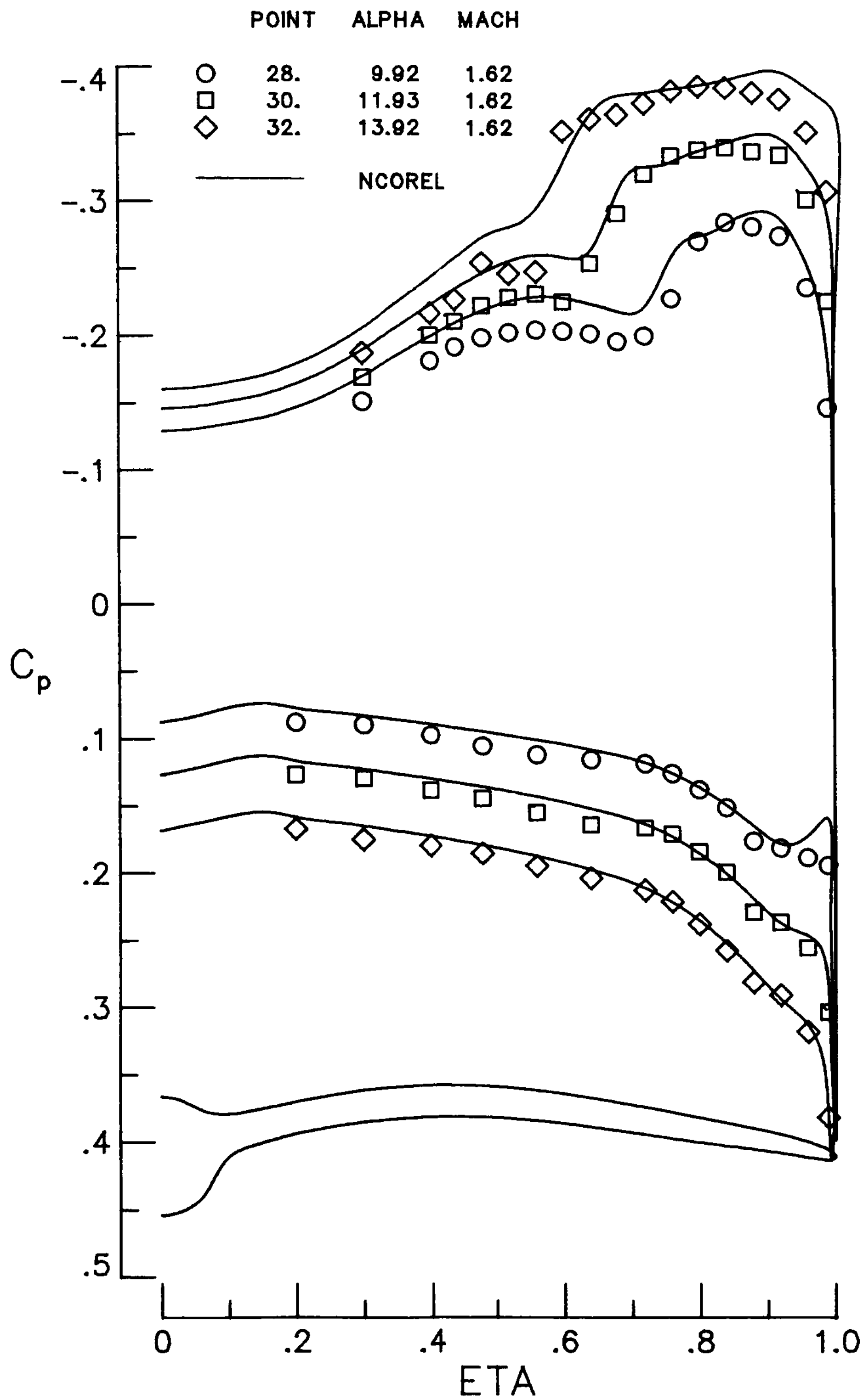
(a) x = 10.6.

Figure 7.- Effect of angle of attack on experimental and theoretical (NCOREL) spanwise pressure distribution for basic leading-edge wing at M = 1.62.



(b) x = 15.5.

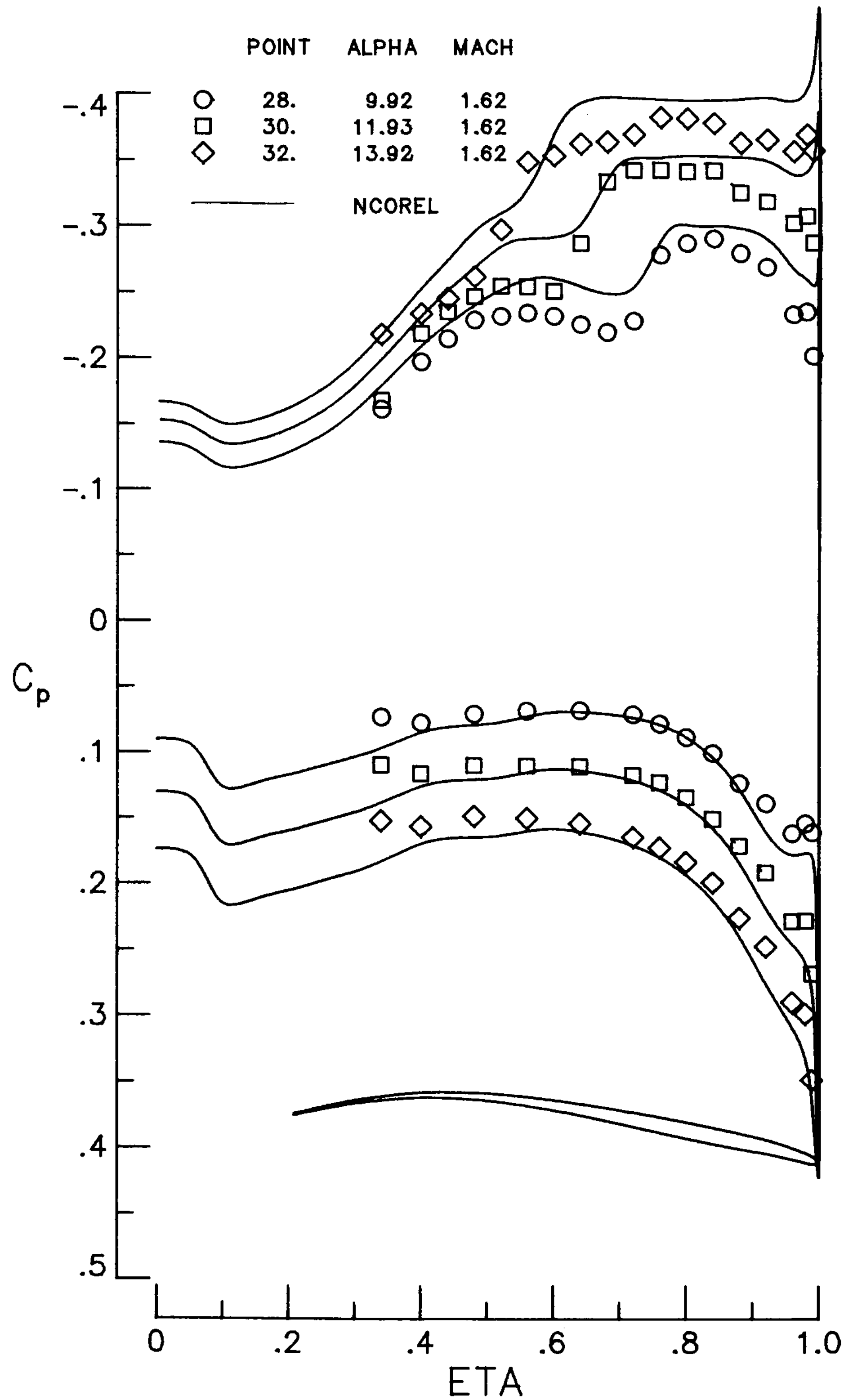
Figure 7.- Continued.



(c) x = 19.9.

Figure 7.- Continued.

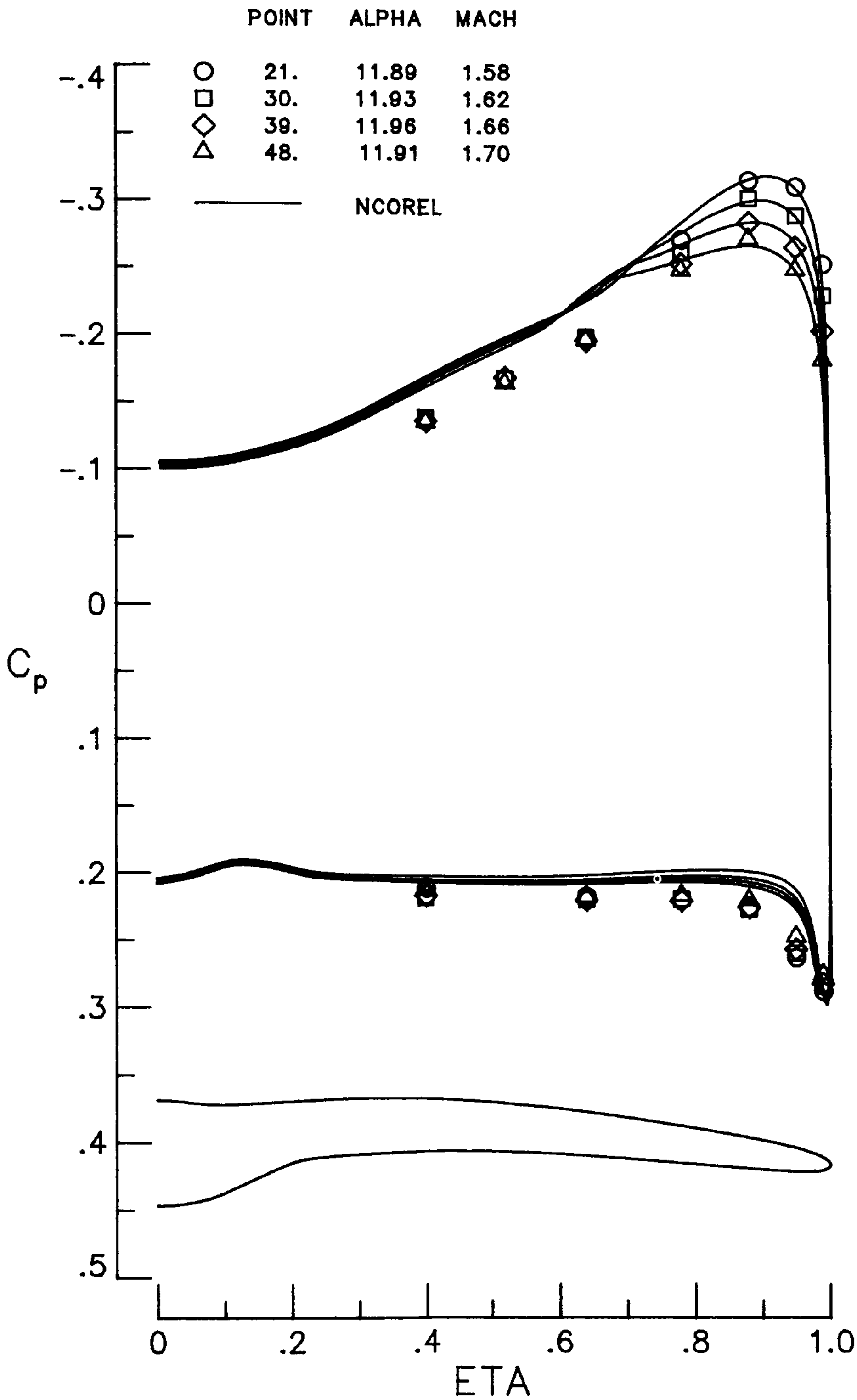
ORIGINAL PAGE IS
OF POOR QUALITY



(d) x = 24.4.

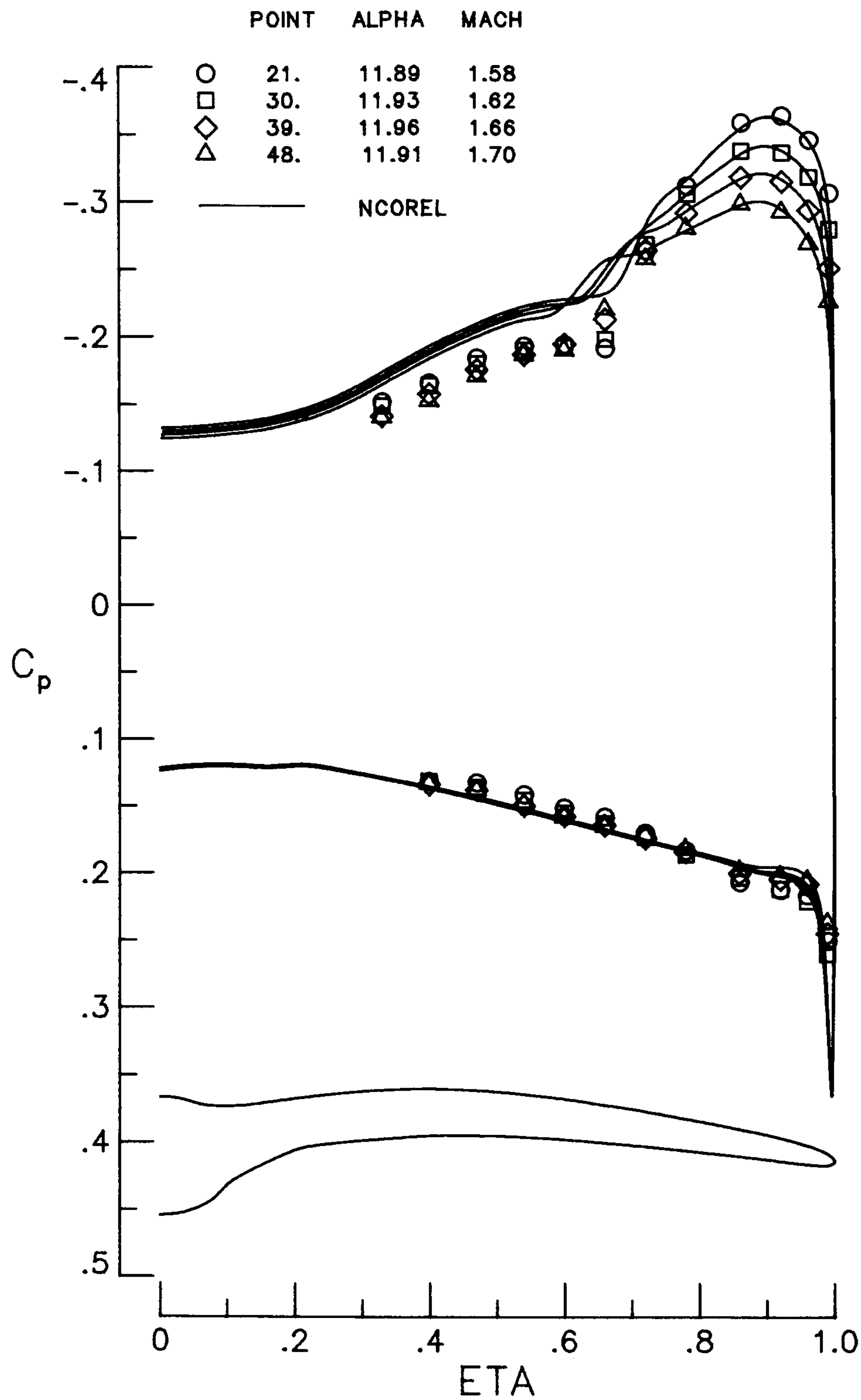
Figure 7.- Concluded.

ORIGINAL PAGE IS
OF POOR QUALITY



(a) x = 10.6.

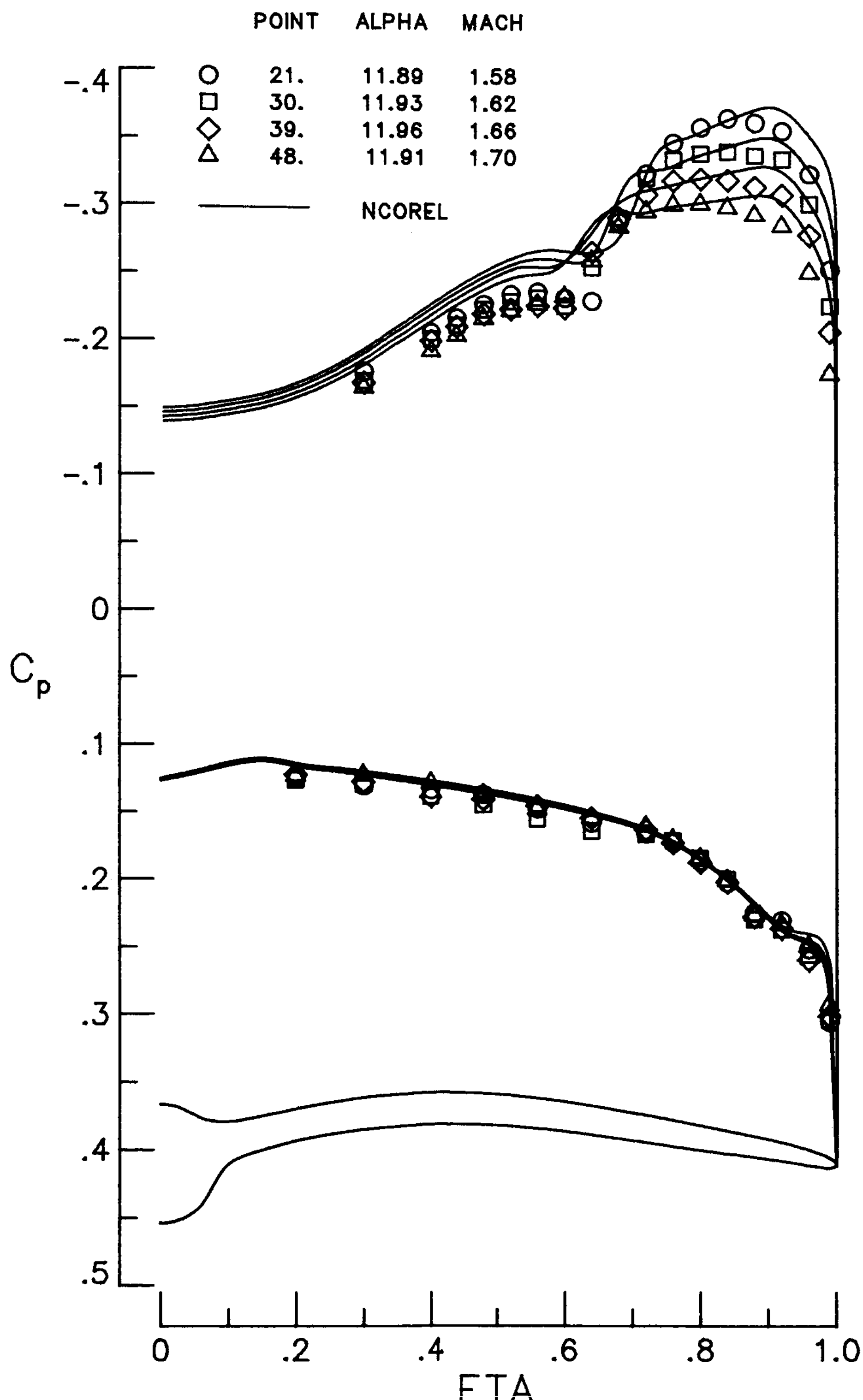
Figure 8.- Effect of Mach number on experimental and theoretical (NCOREL) spanwise pressure distribution for basic leading-edge wing at $\alpha \approx 12°$.



(b) x = 15.5.

Figure 8.- Continued.

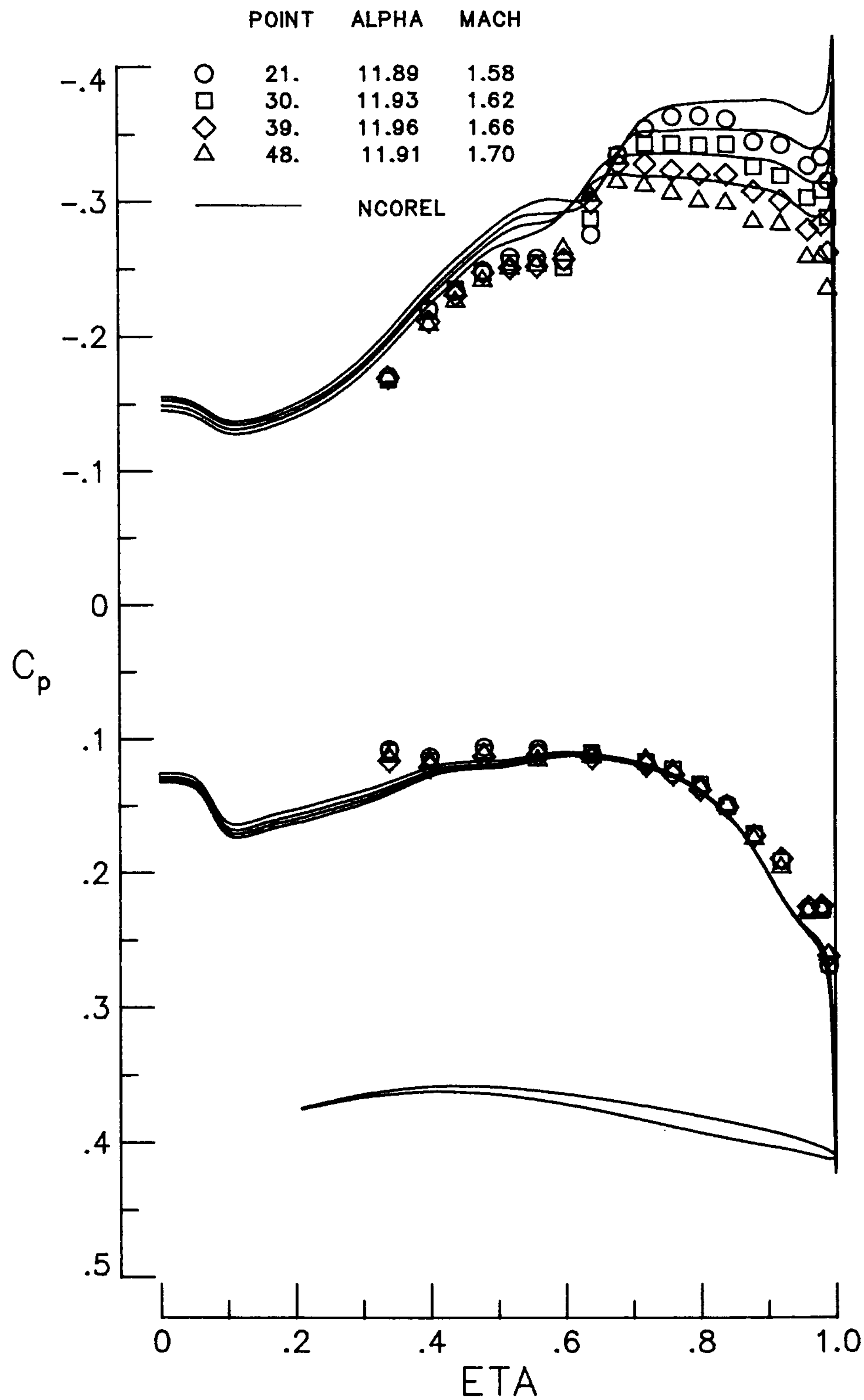
ORIGINAL PAGE IS
OF POOR QUALITY



(c) x = 19.9.

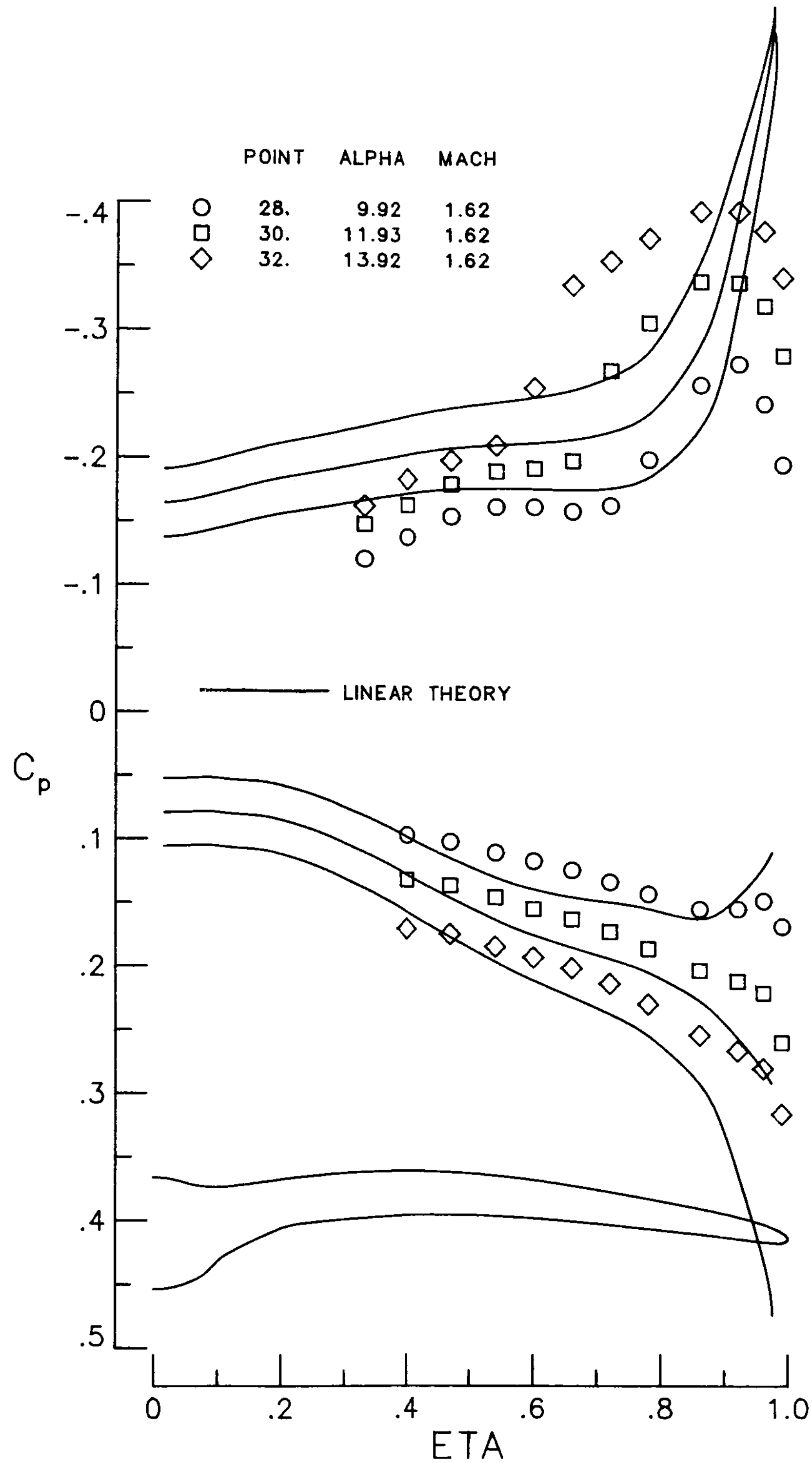
Figure 8.- Continued.

ORIGINAL PAGE IS
OF POOR QUALITY



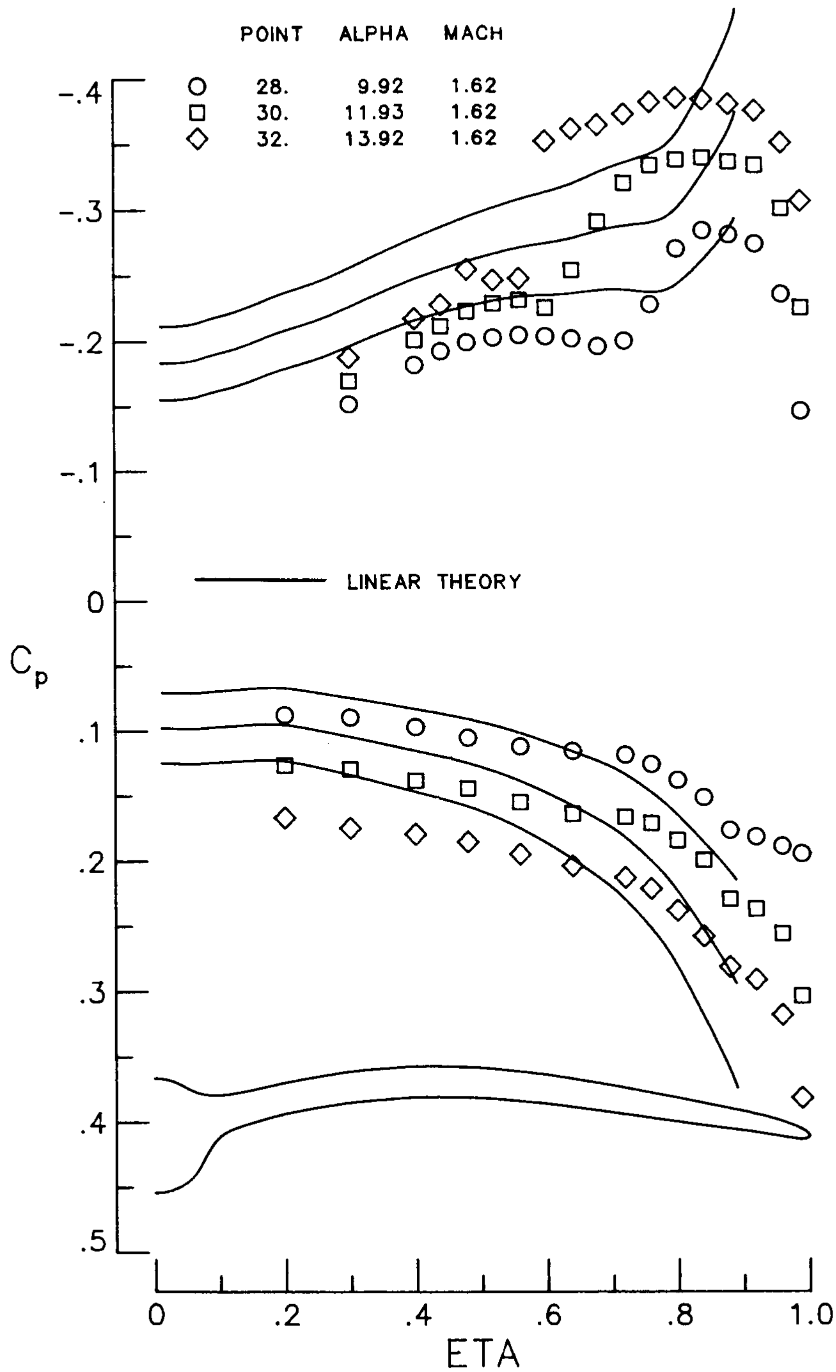
(d) x = 24.4.

Figure 8.- Concluded.



(a) x = 15.5.

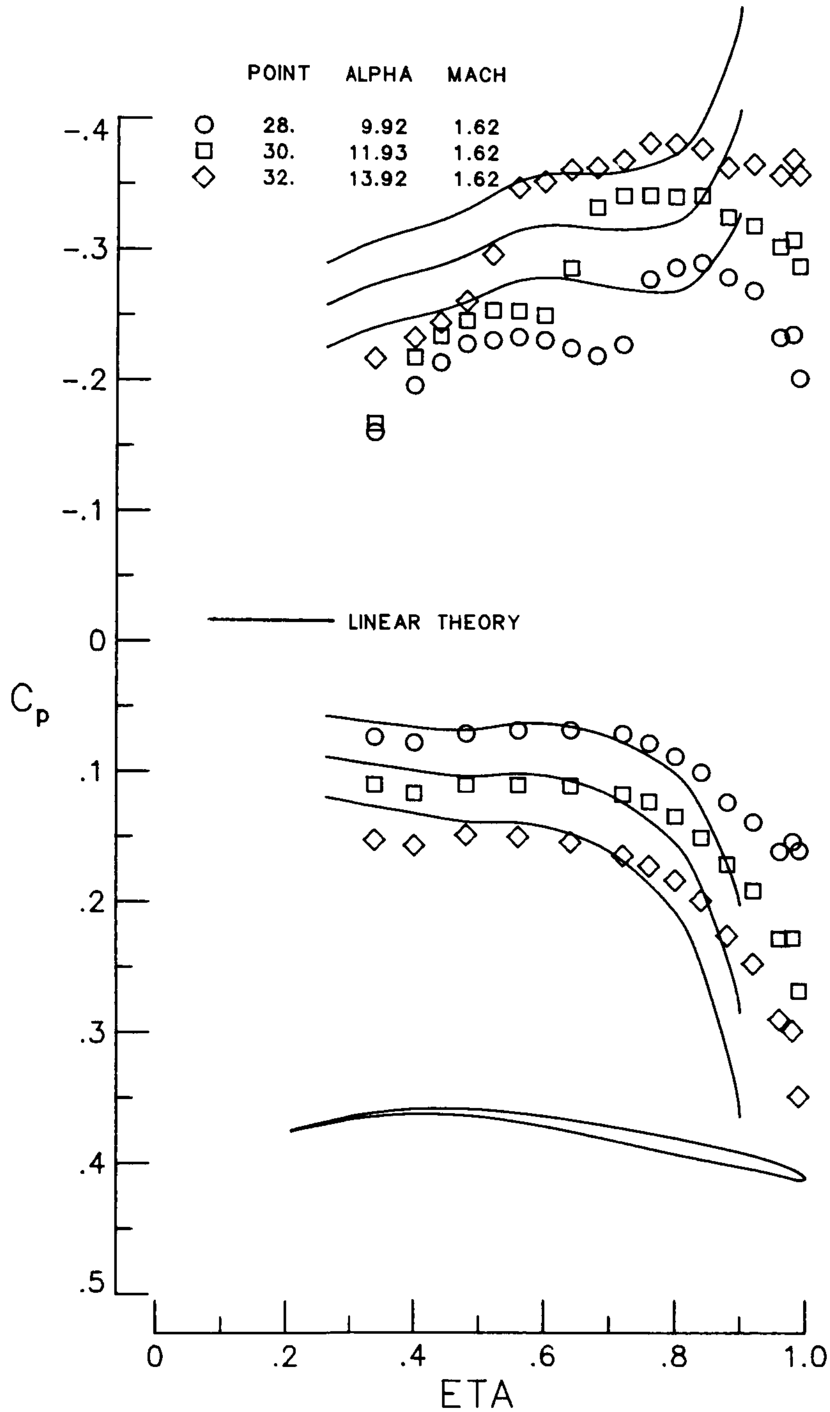
Figure 9.- Effect of angle of attack on experimental and linear-theory spanwise pressure distributions for basic leading-edge wing at M = 1.62.



(b) x = 19.9.

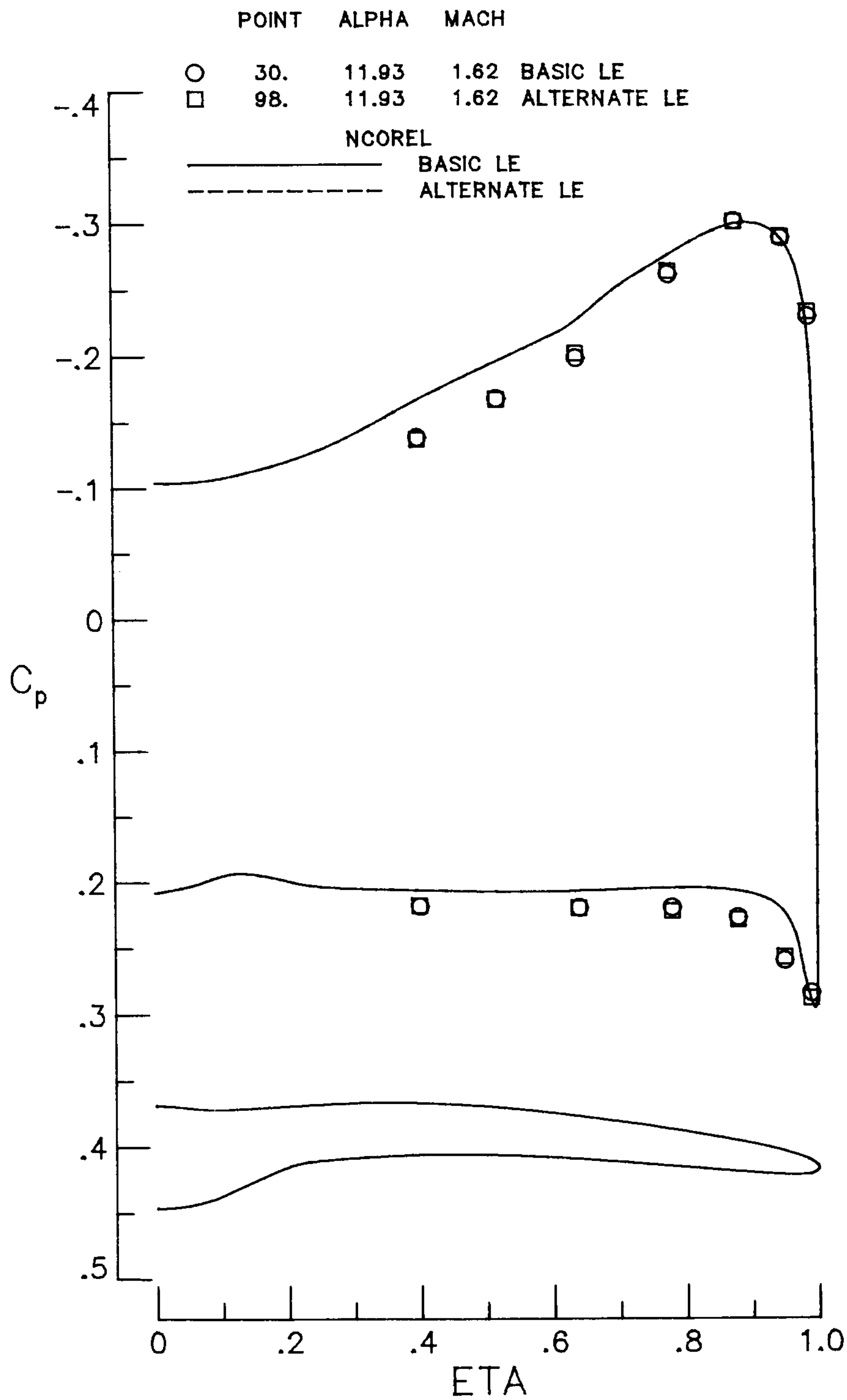
Figure 9.- Continued.

ORIGINAL PAGE IS
OF POOR QUALITY



(c) x = 24.4.

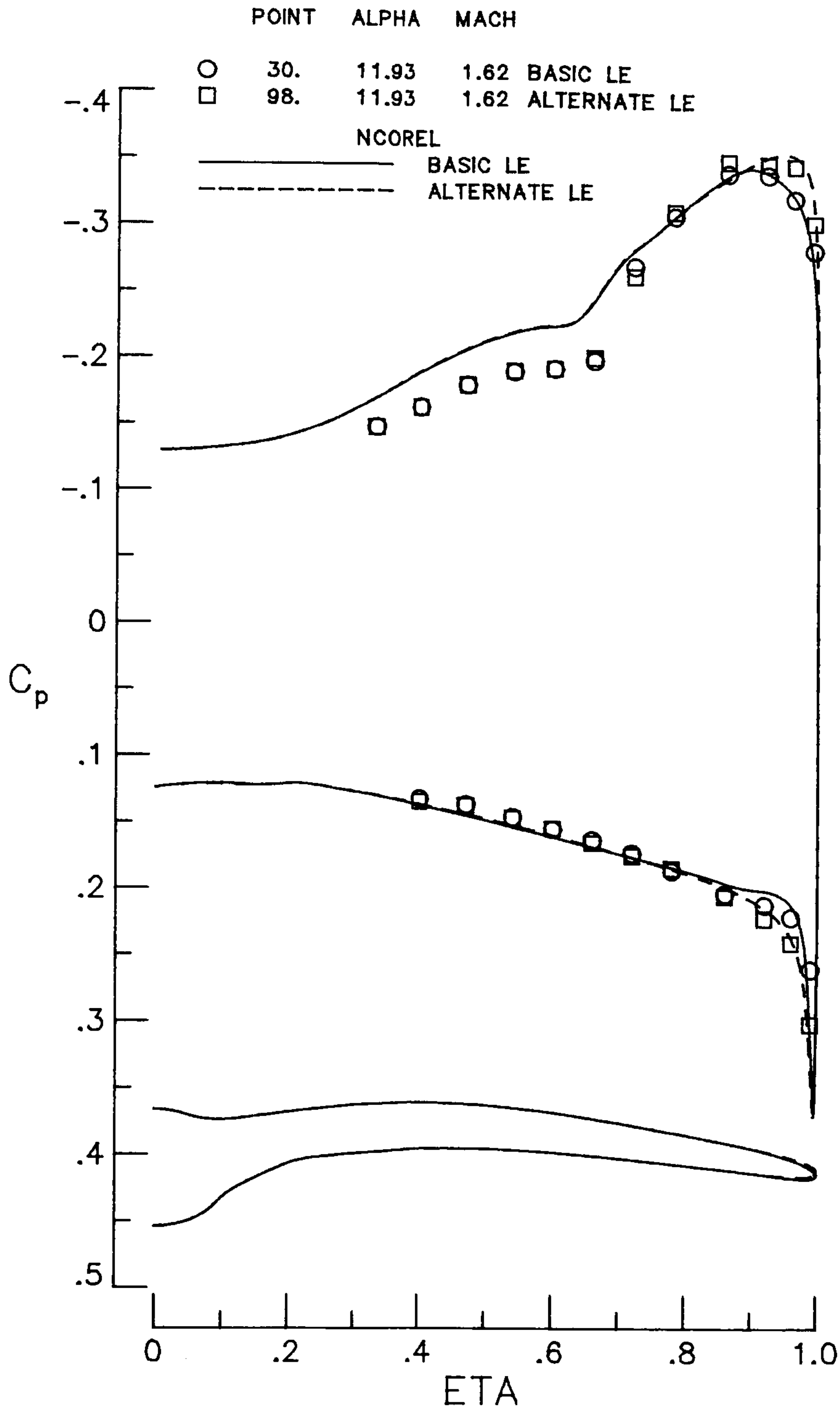
Figure 9.- Concluded.



(a) x = 10.6.

Figure 10.- Experimental and theoretical (NCOREL) spanwise pressure distributions for basic and alternate leading-edge wings at $M = 1.62$ and $\alpha \approx 12°$.

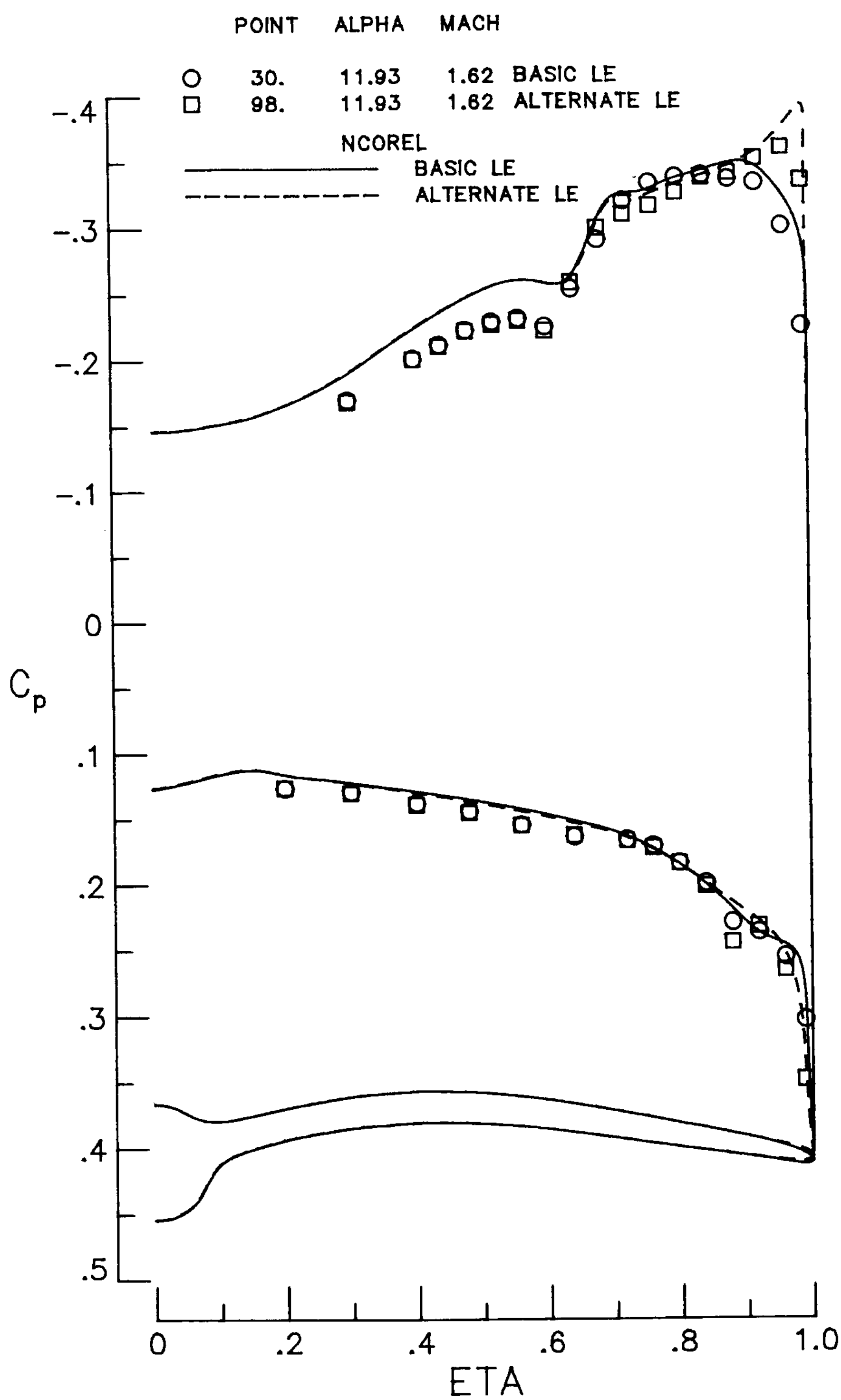
ORIGINAL PAGE IS
OF POOR QUALITY



(b) x = 15.5.

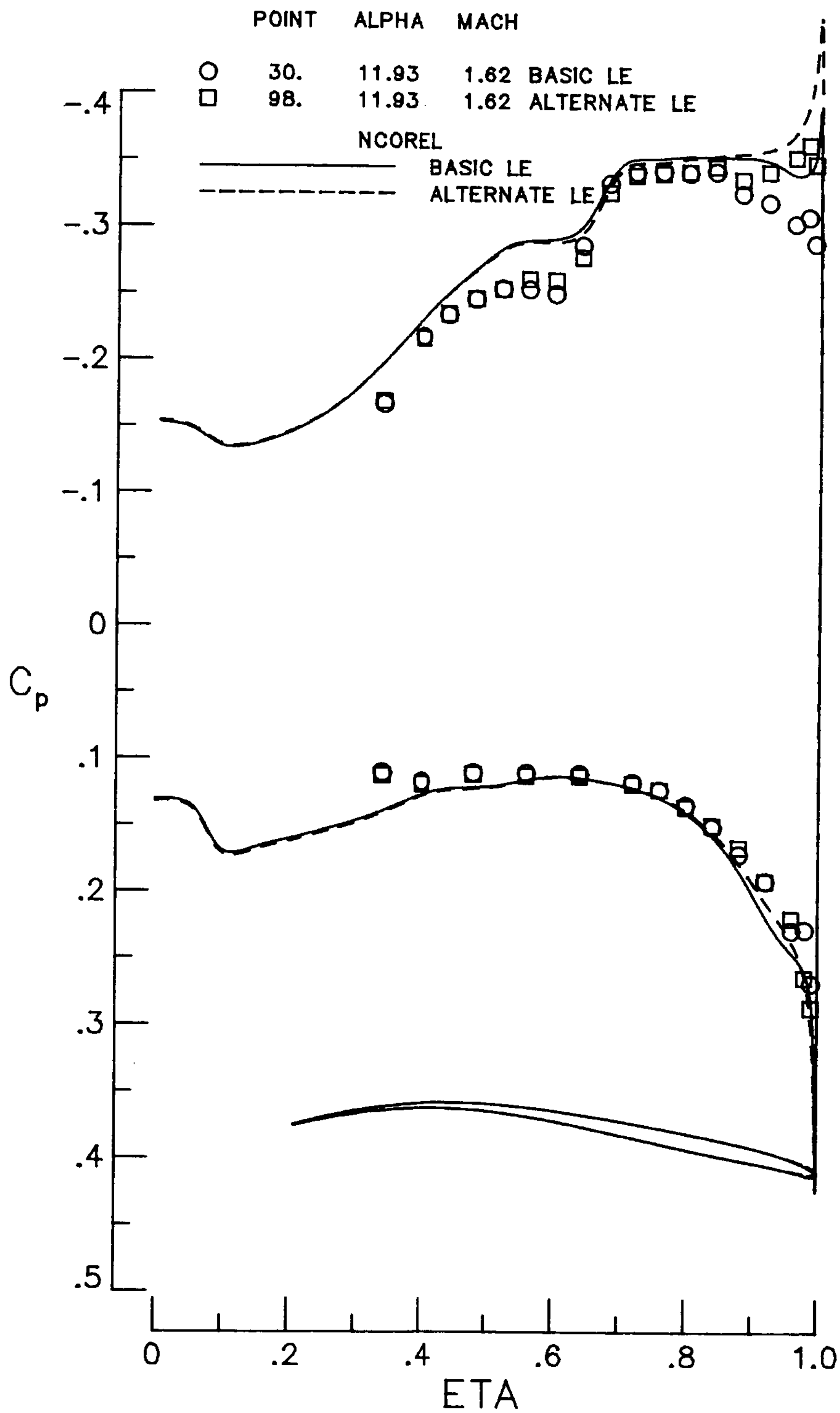
Figure 10.- Continued.

ORIGINAL PAGE IS
OF POOR QUALITY



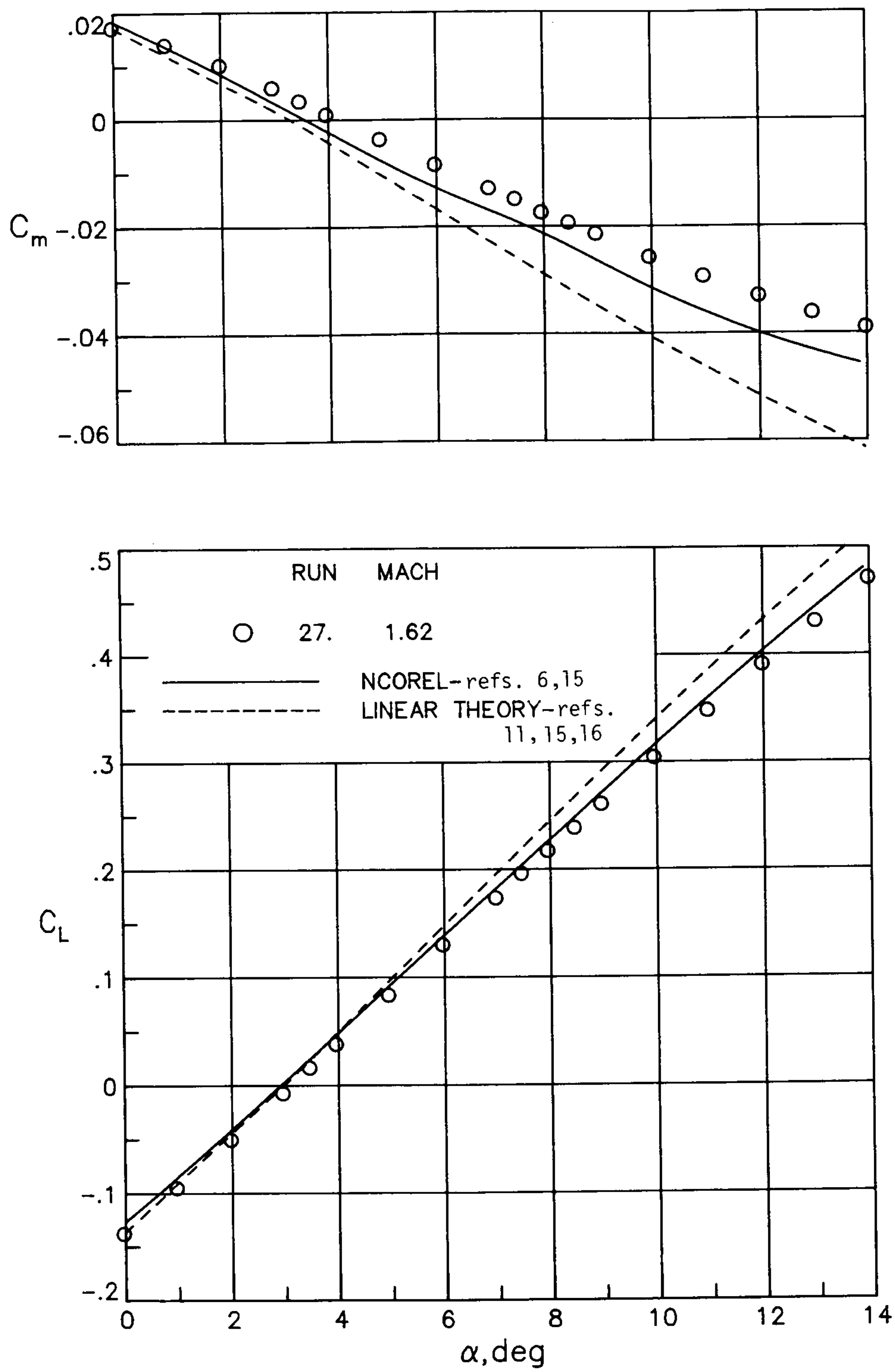
(c) x = 19.9.

Figure 10.- Continued.



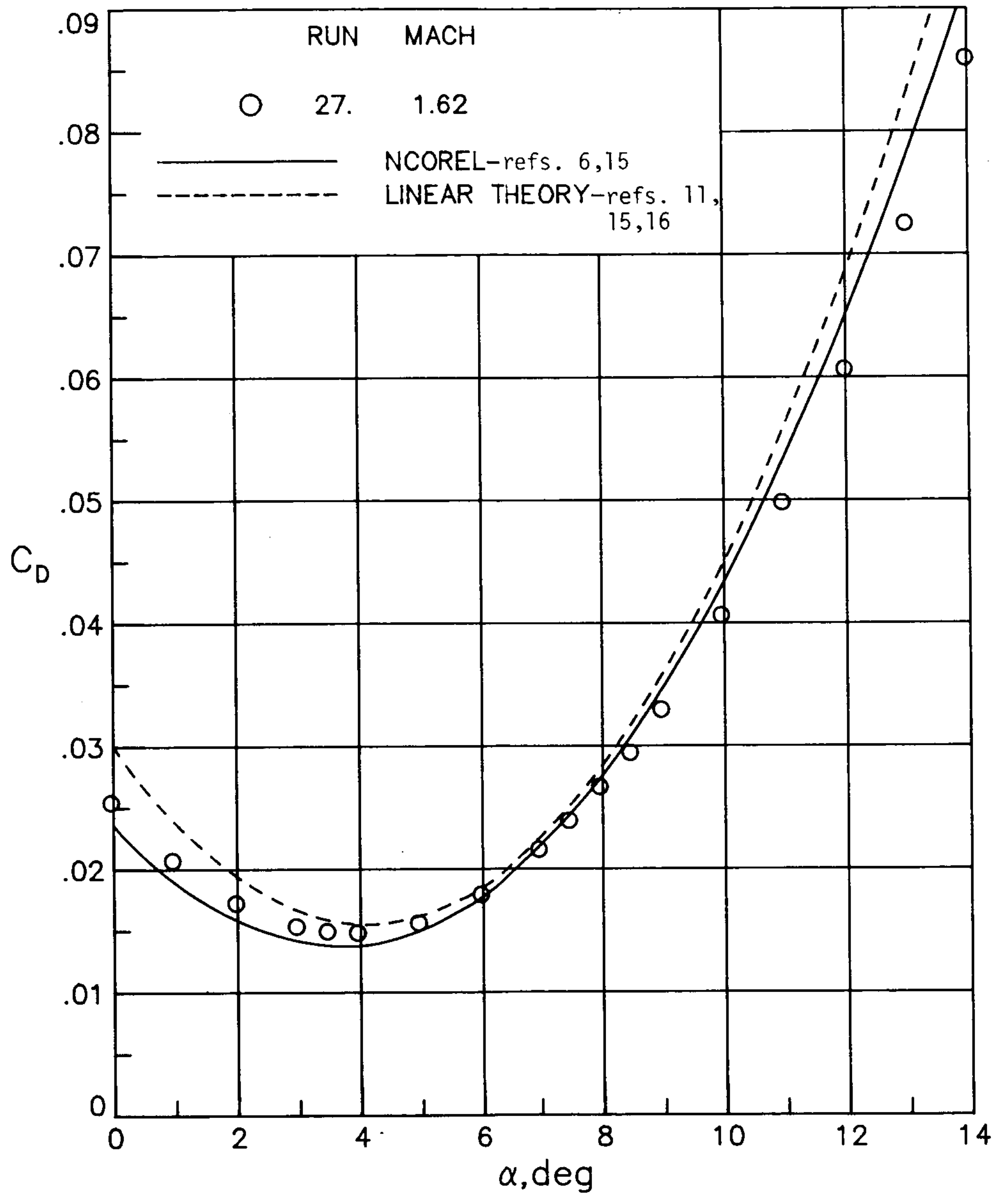
(d) x = 24.4.

Figure 10.- Concluded.



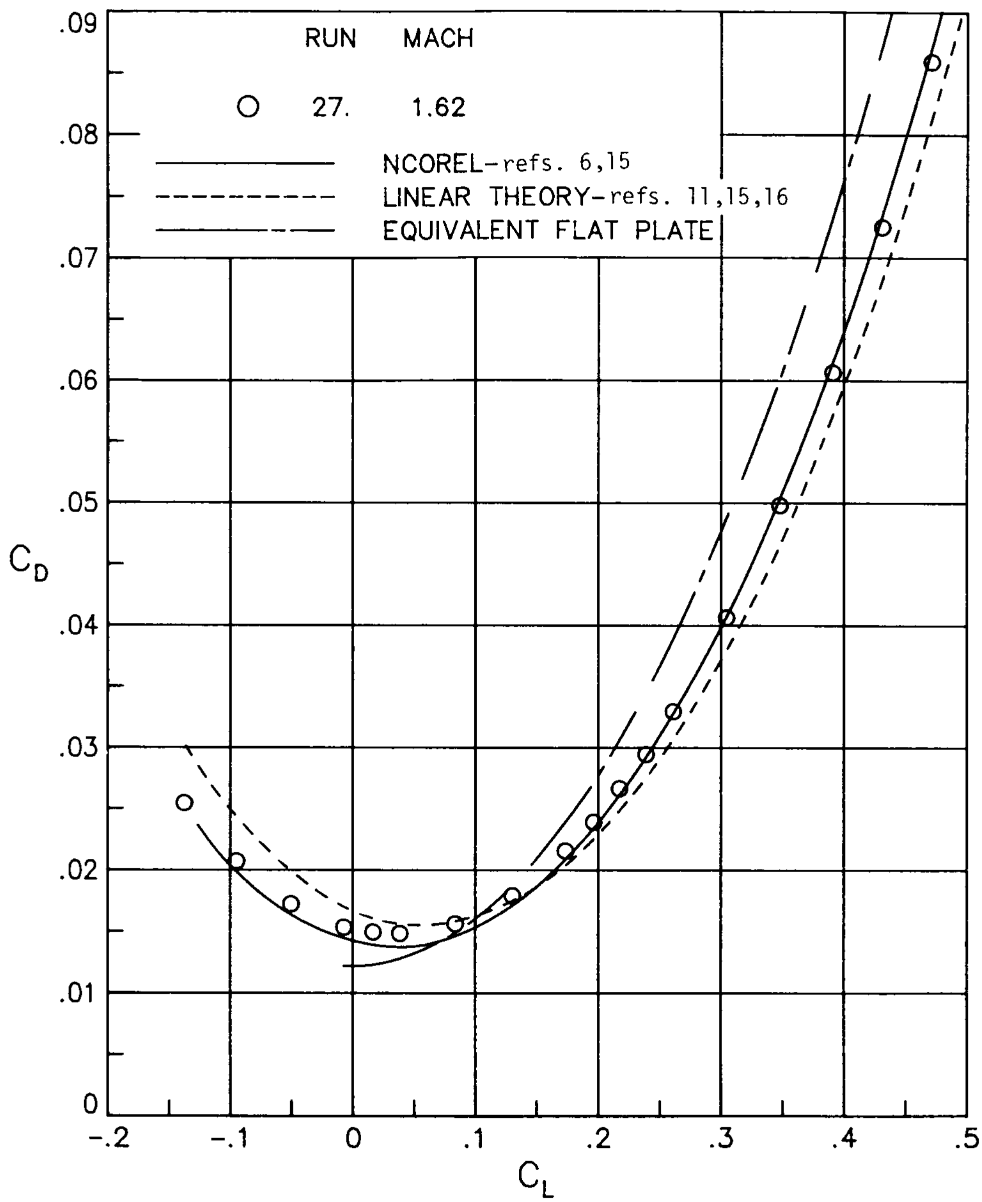
(a) C_m and C_L versus α.

Figure 11.- Experimental and theoretical longitudinal forces and moments for basic leading-edge wing at $M = 1.62$.



(b) C_D versus α.

Figure 11.- Continued.



(c) C_D versus C_L.

Figure 11.- Concluded.

ORIGINAL PAGE IS
OF POOR QUALITY

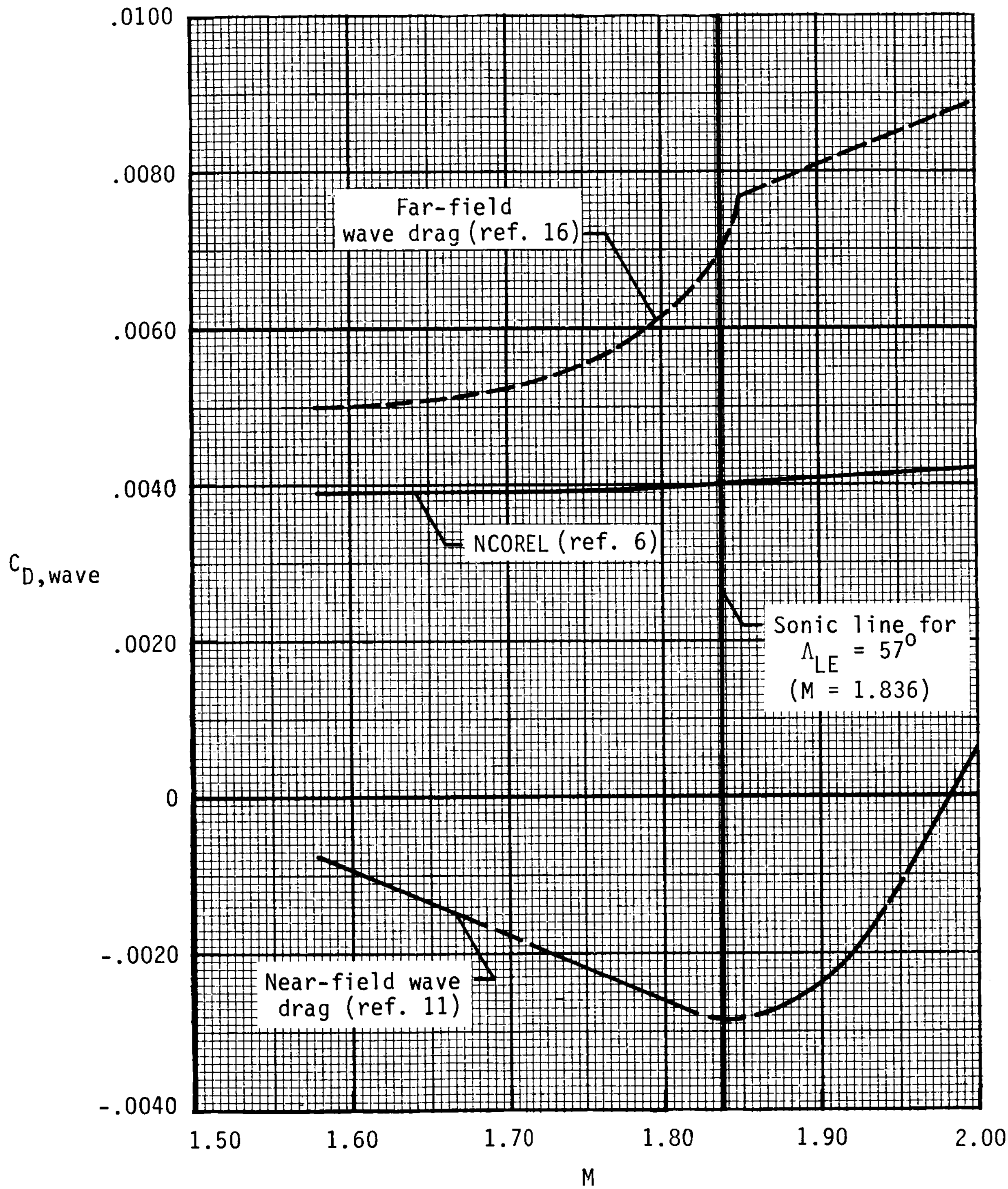
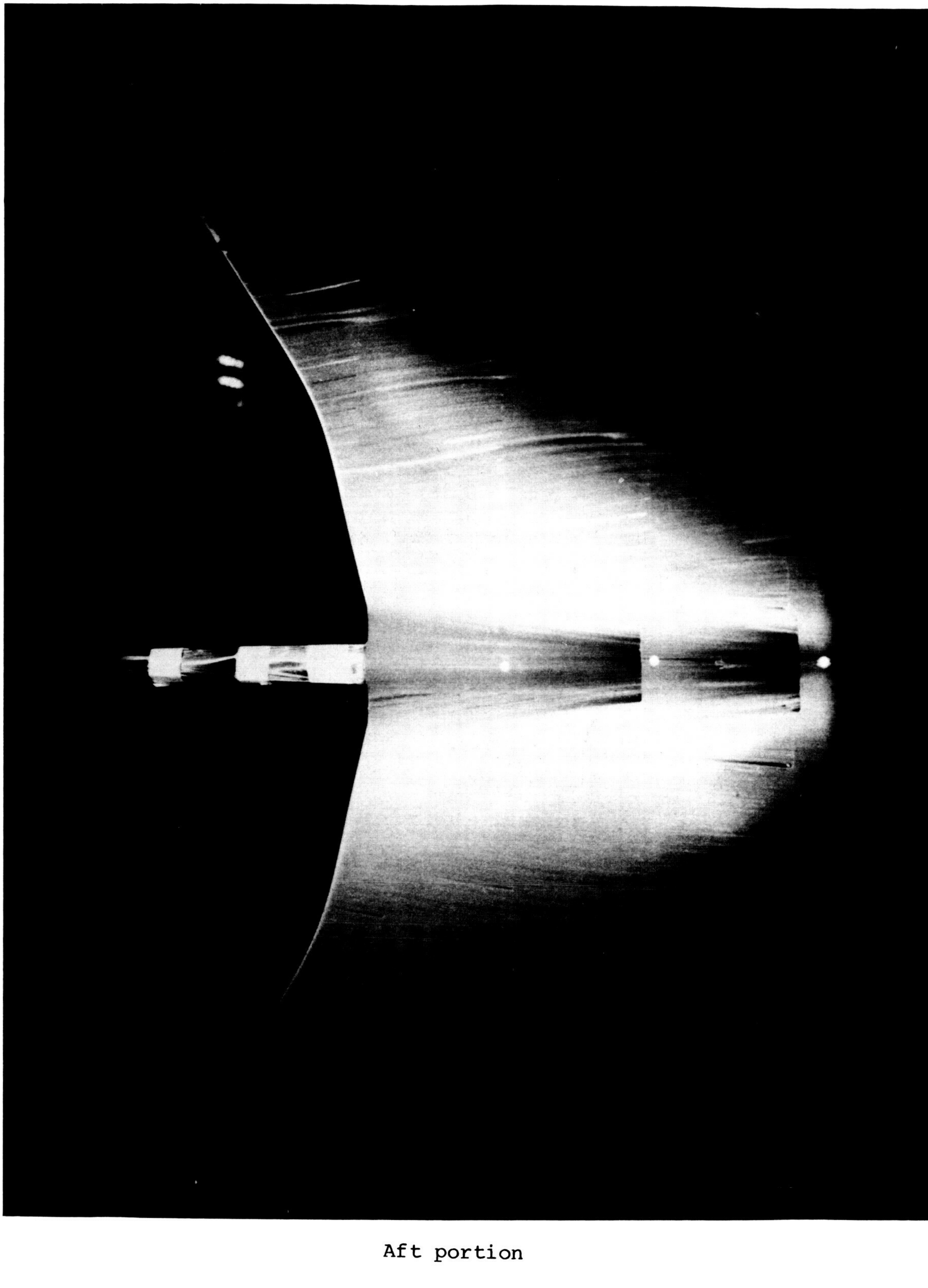


Figure 12.- Comparison of zero-lift wave-drag estimation methods.

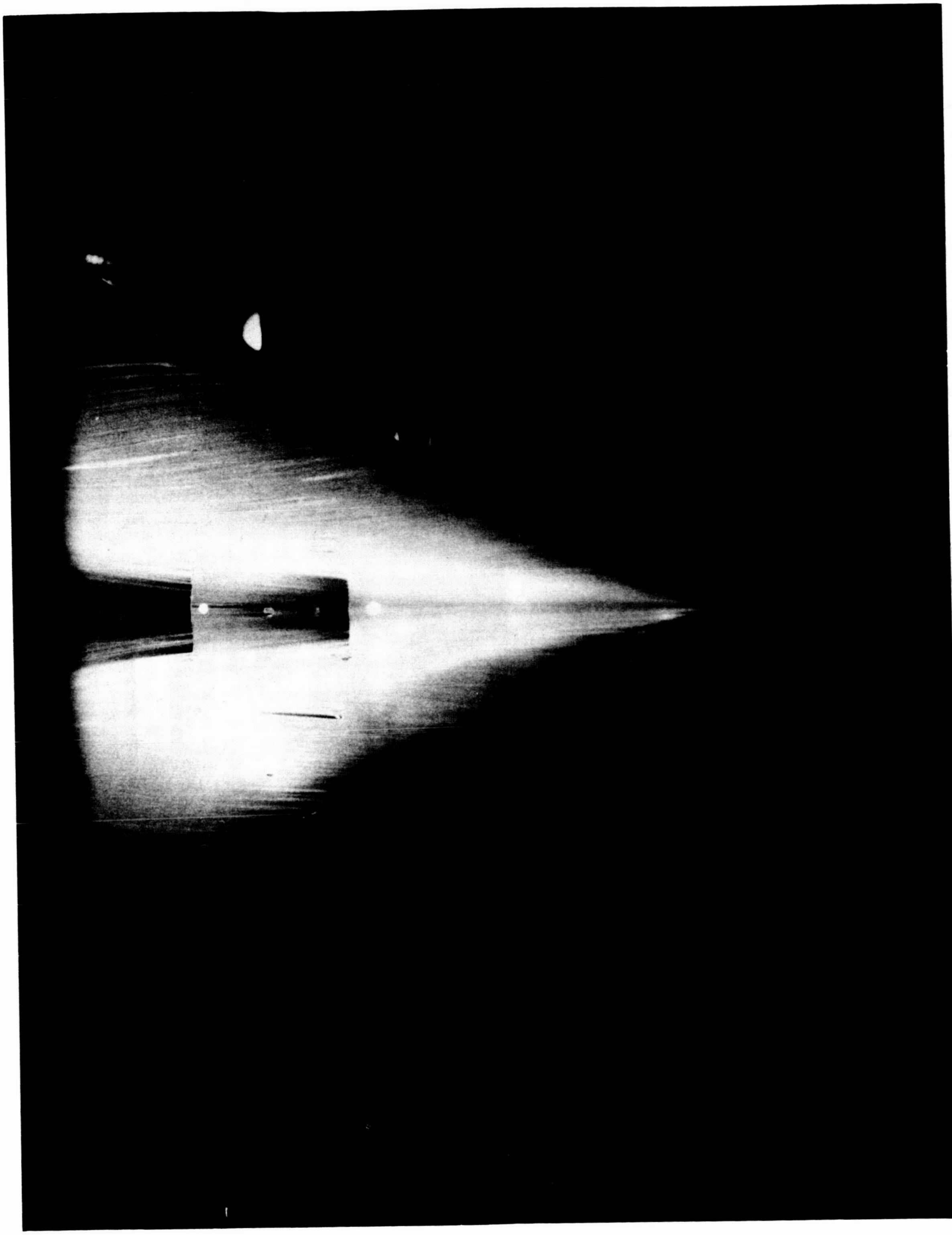


Aft portion

(a) $\alpha = 8°$.

L-84-50

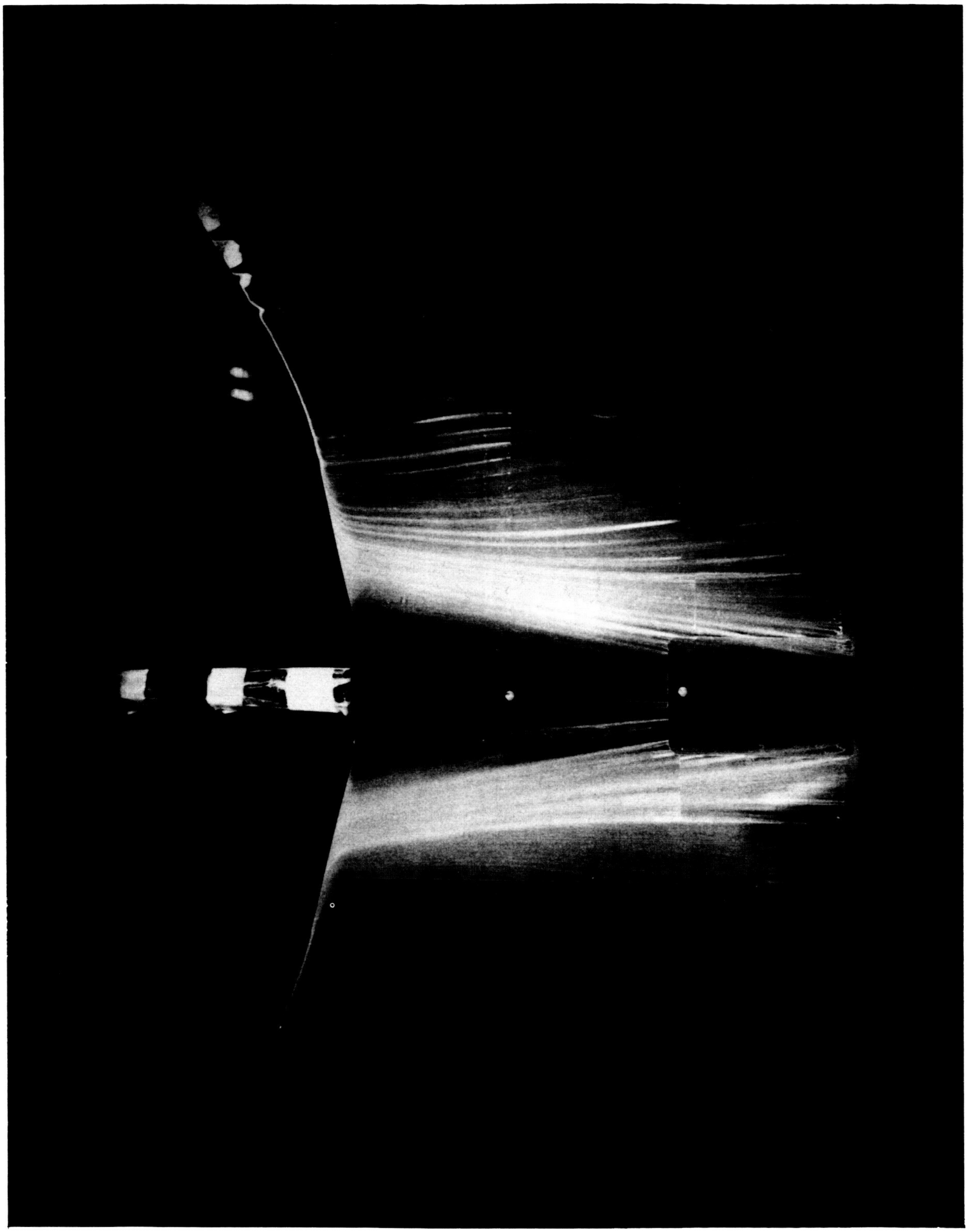
Figure 13.- Oil-flow photograph of basic leading-edge wing at $M = 1.62$.



Forward portion

(a) $\alpha = 8°$. L-84-51

Figure 13.- Continued.

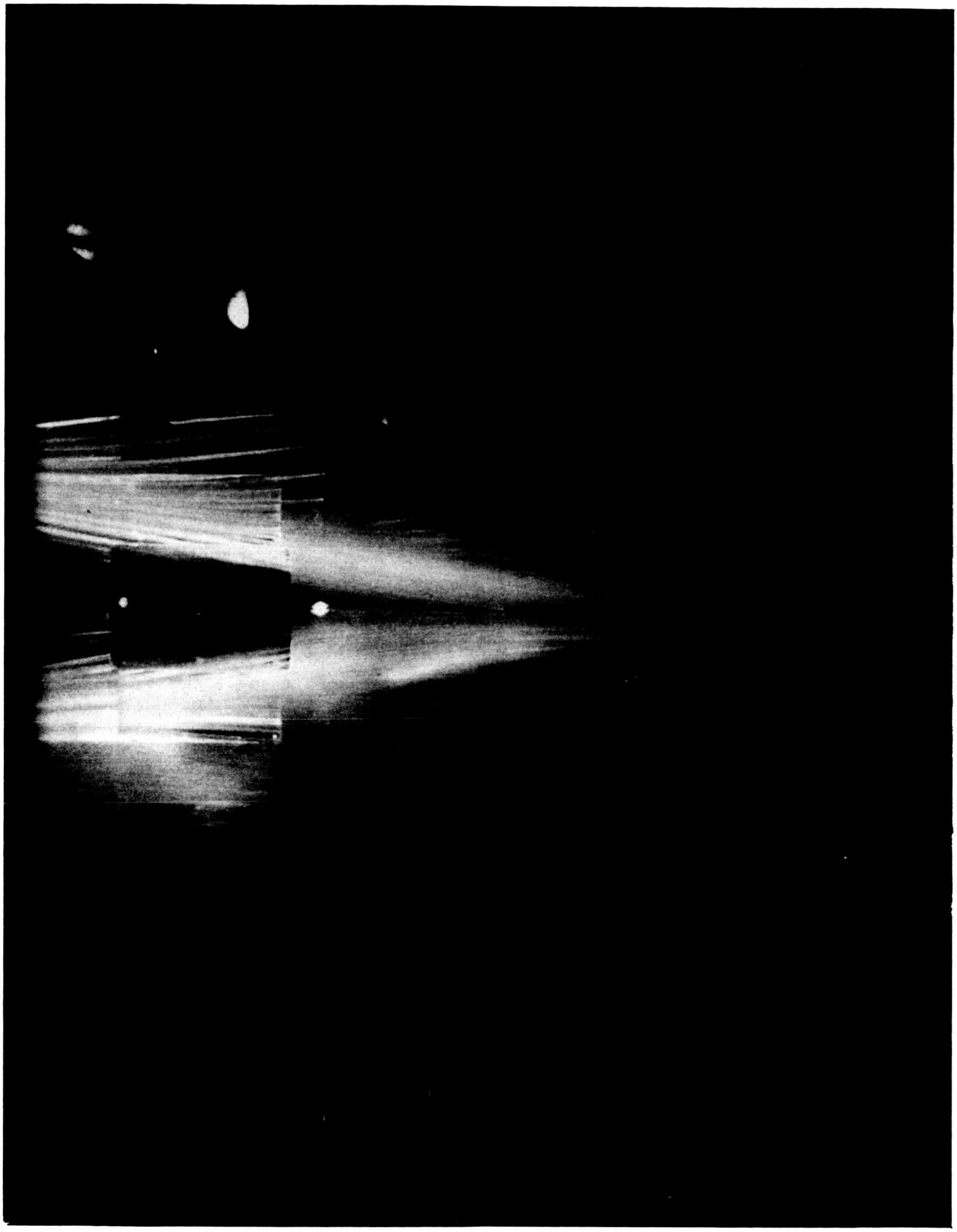


Aft portion

(b) $\alpha = 10°$.

Figure 13.- Continued.

L-84-52

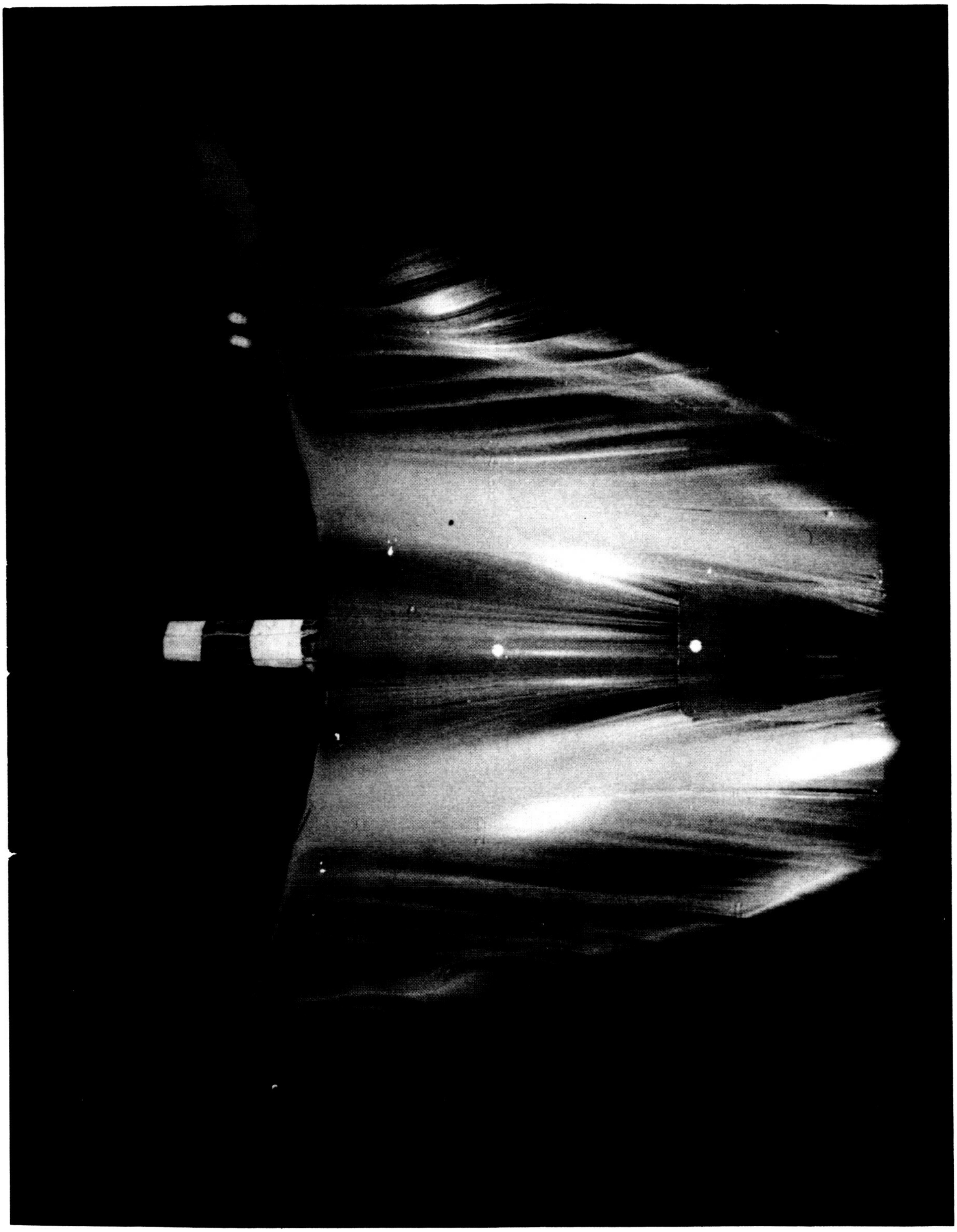


Forward portion

(b) $\alpha = 10°$.

L-84-53

Figure 13.- Continued.



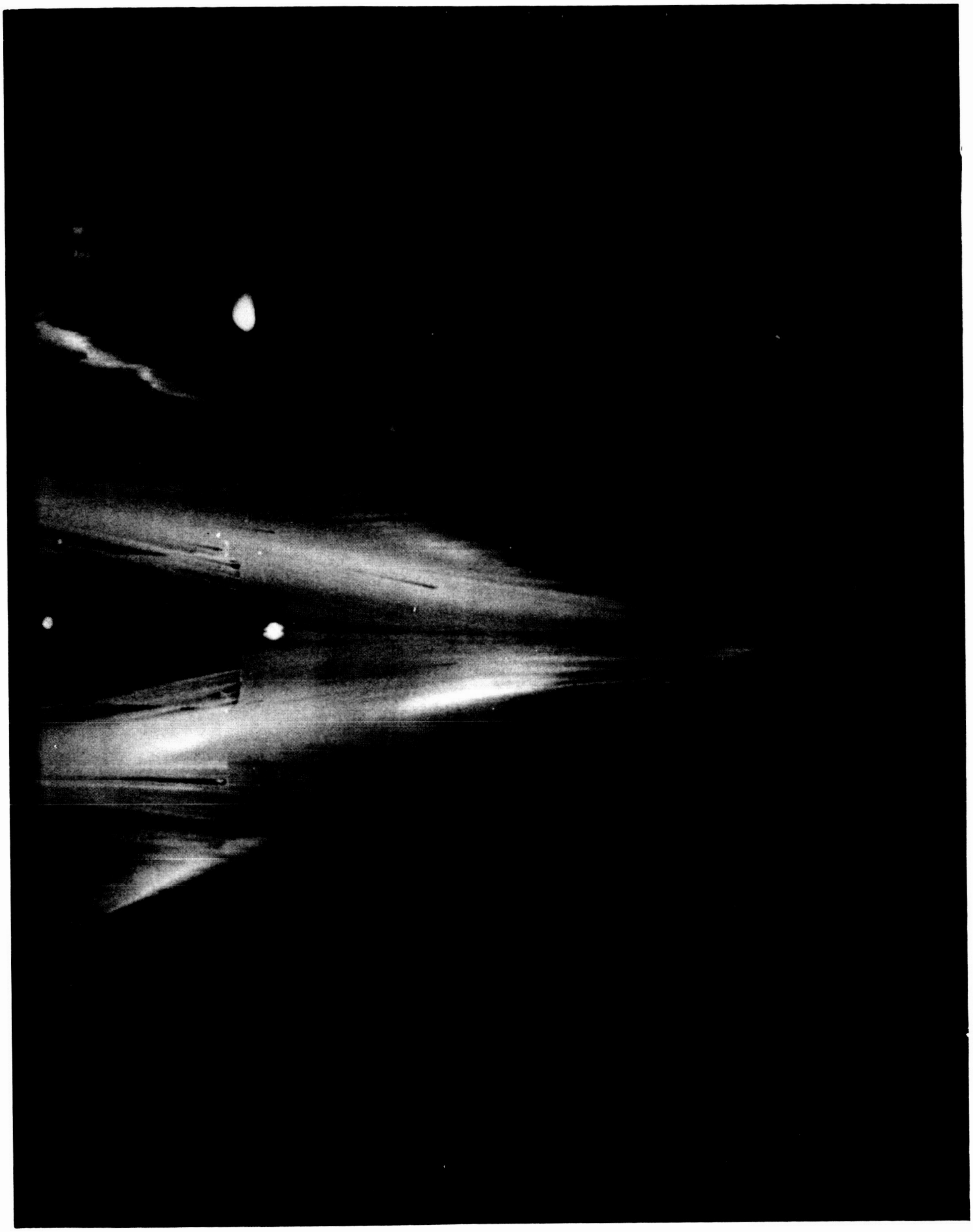
Aft portion

(c) $\alpha = 12°$.

L-84-54

Figure 13.- Continued.

ORIGINAL PAGE IS
OF POOR QUALITY



Forward portion

(c) $\alpha = 12°$.

L-84-55

Figure 13.- Continued.

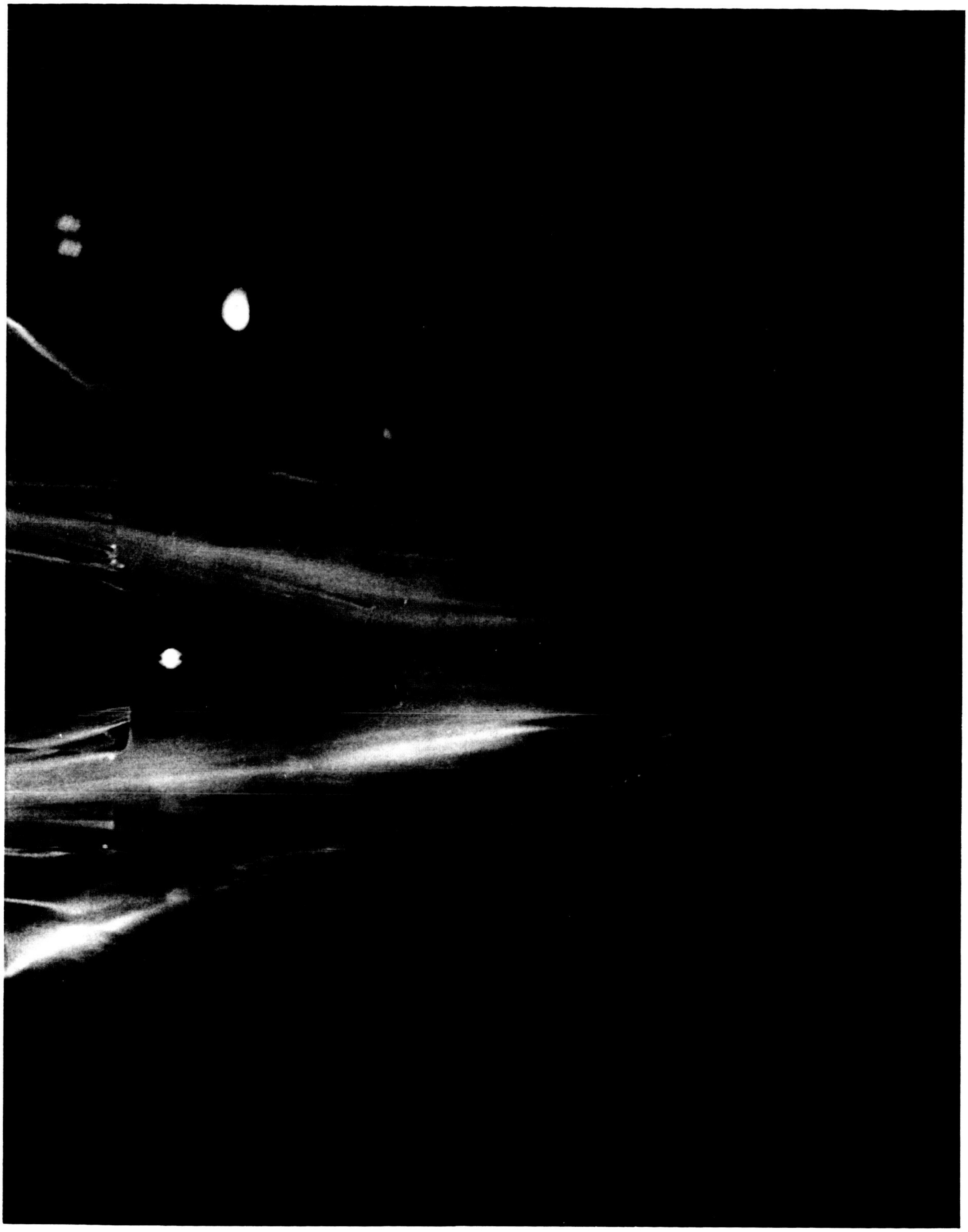
Aft portion

(d) $\alpha = 14°$.

L-84-56

Figure 13.- Continued.

ORIGINAL PAGE IS
OF POOR QUALITY



Forward portion

(d) $\alpha = 14°$.

L-84-57

Figure 13.- Concluded.

ORIGINAL PAGE IS
OF POOR QUALITY

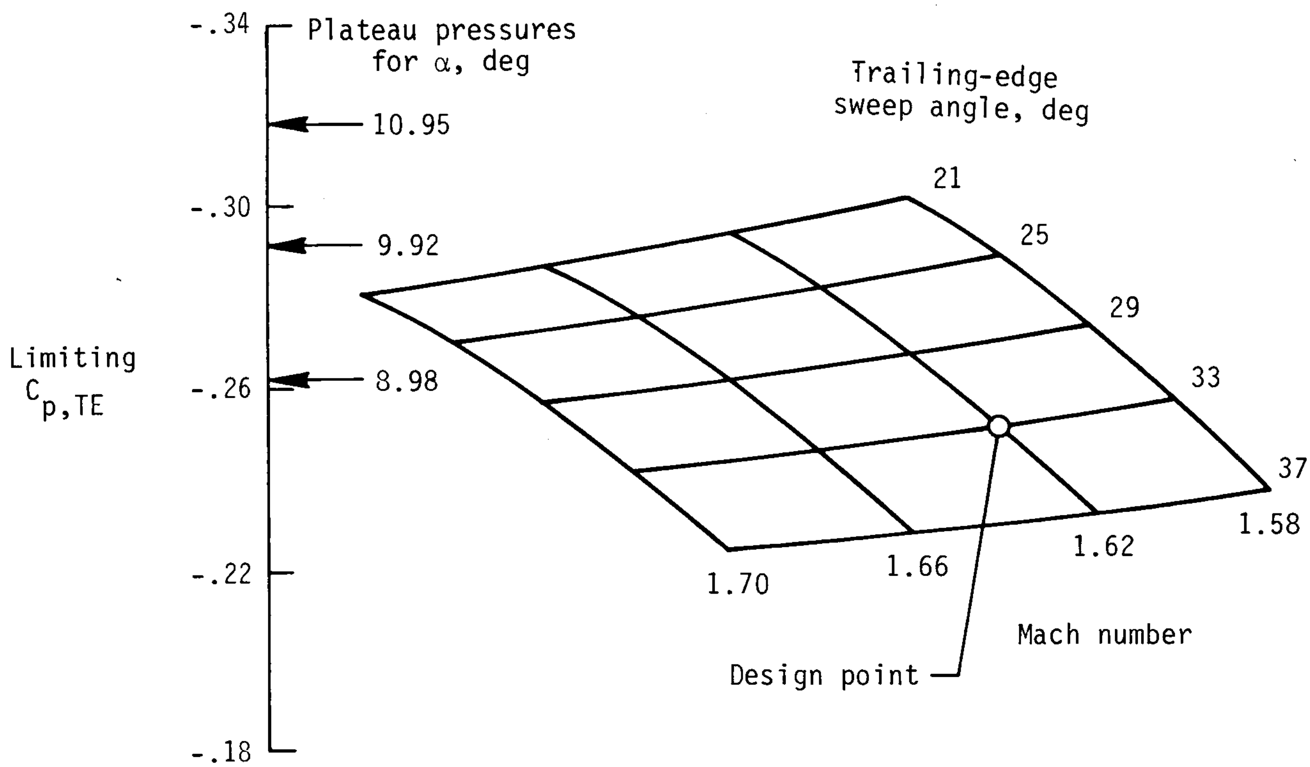
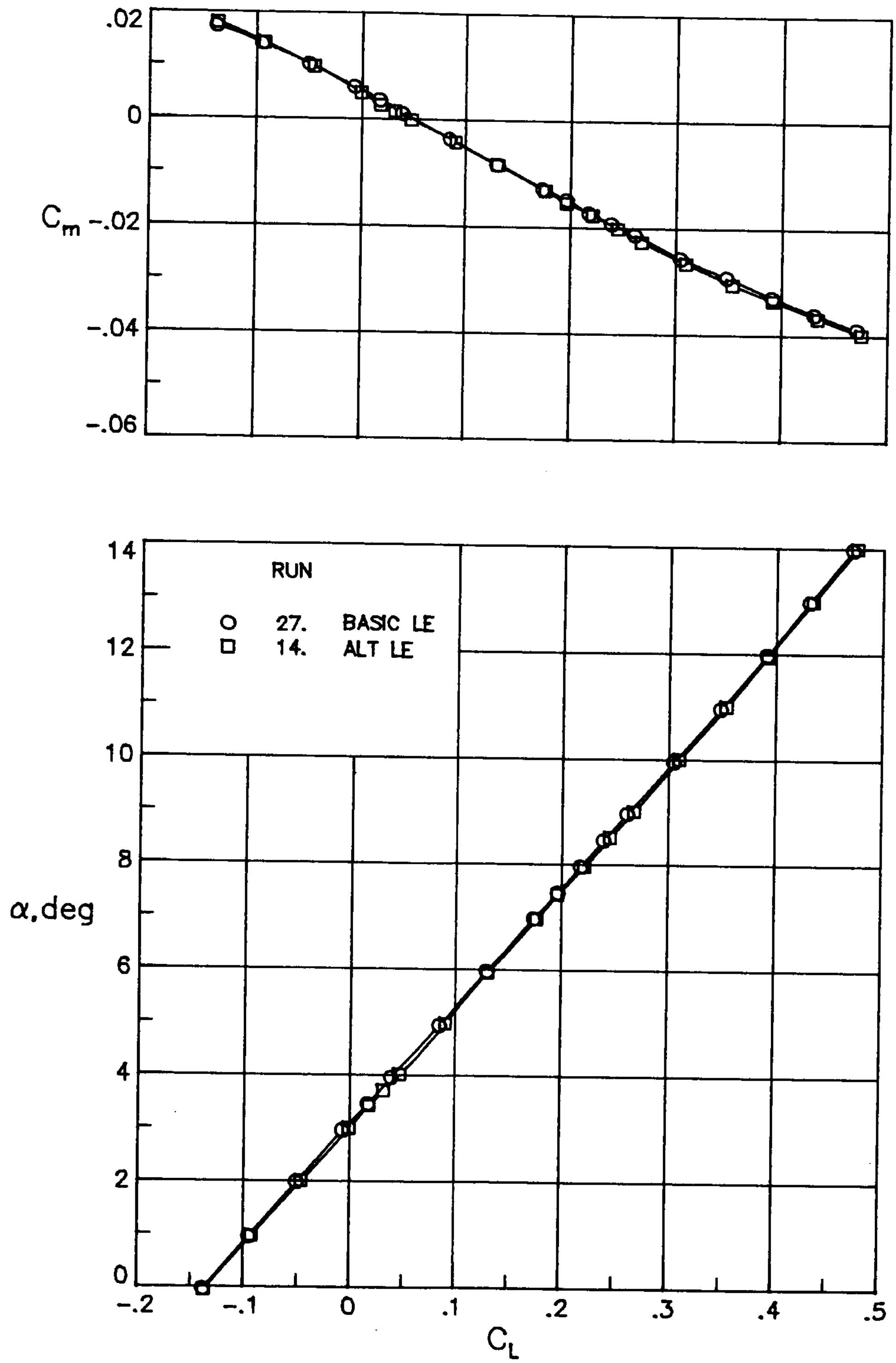


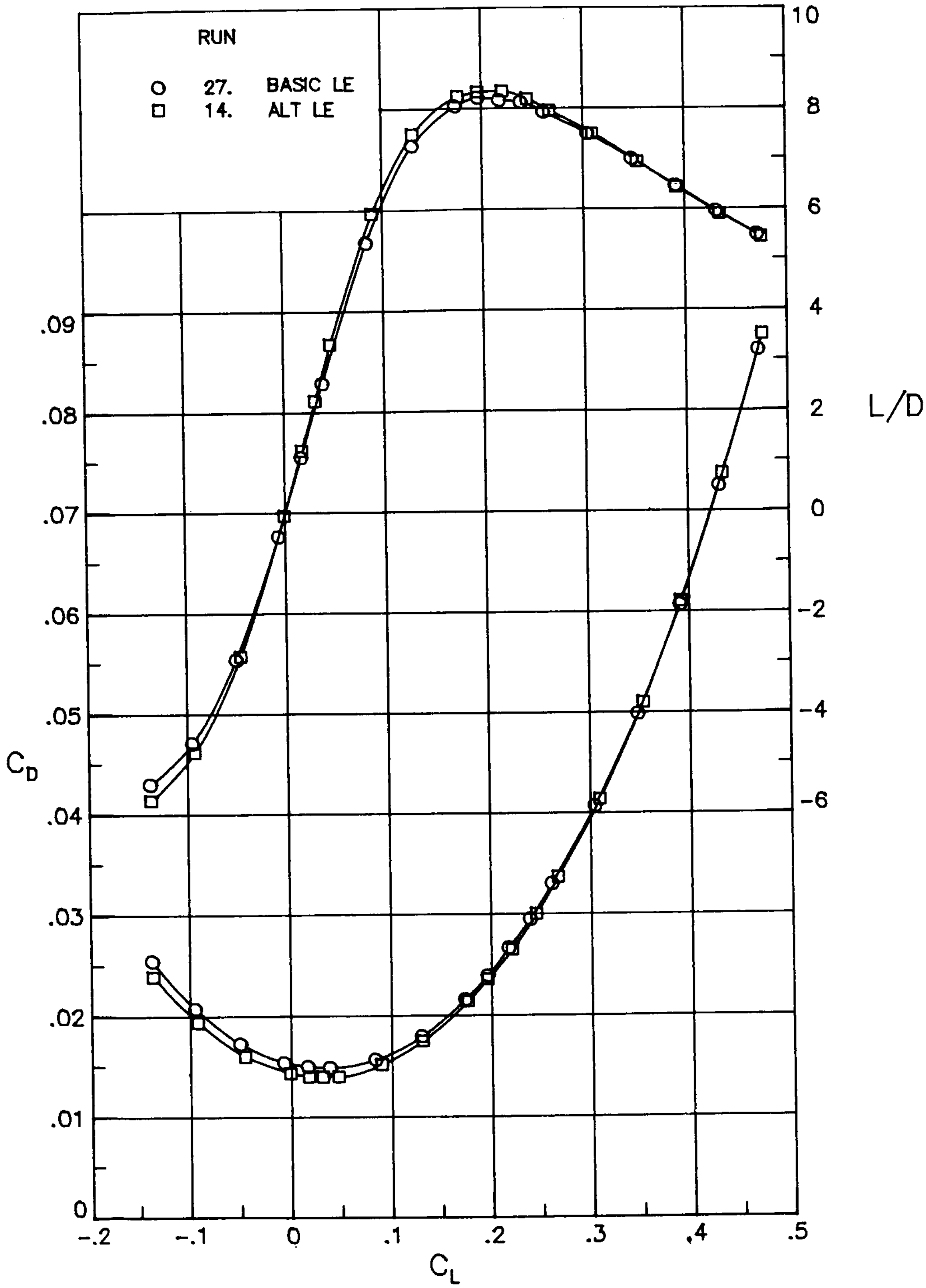
Figure 14.- Critical trailing-edge pressure estimates from reference 12.

ORIGINAL PAGE IS
OF POOR QUALITY



(a) C_m and α versus C_L.

Figure 15.- Experimental longitudinal forces and moments for basic and alternate leading-edge wings at $M = 1.62$.



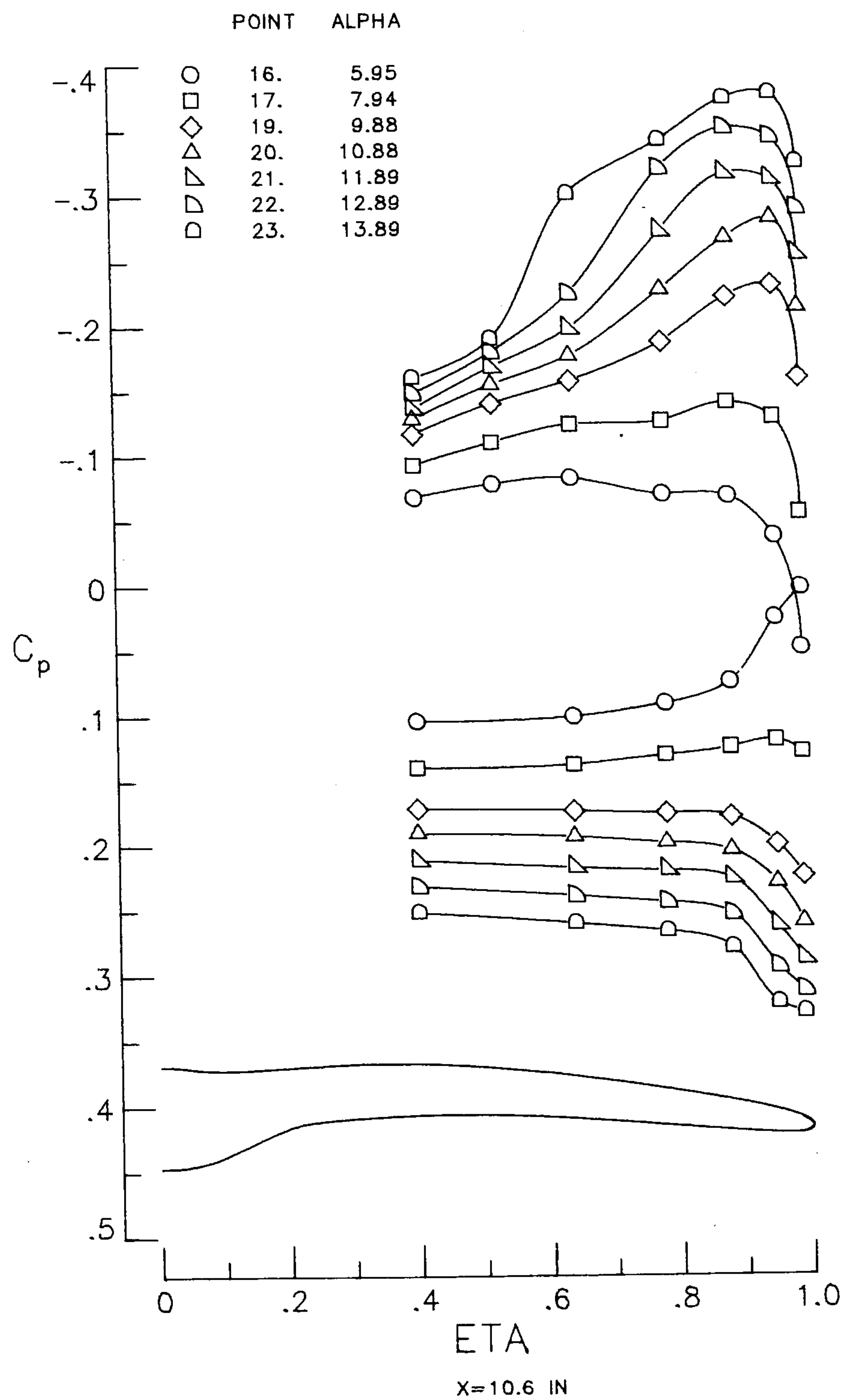
(b) C_D and L/D versus C_L.

Figure 15.- Concluded.

APPENDIX A

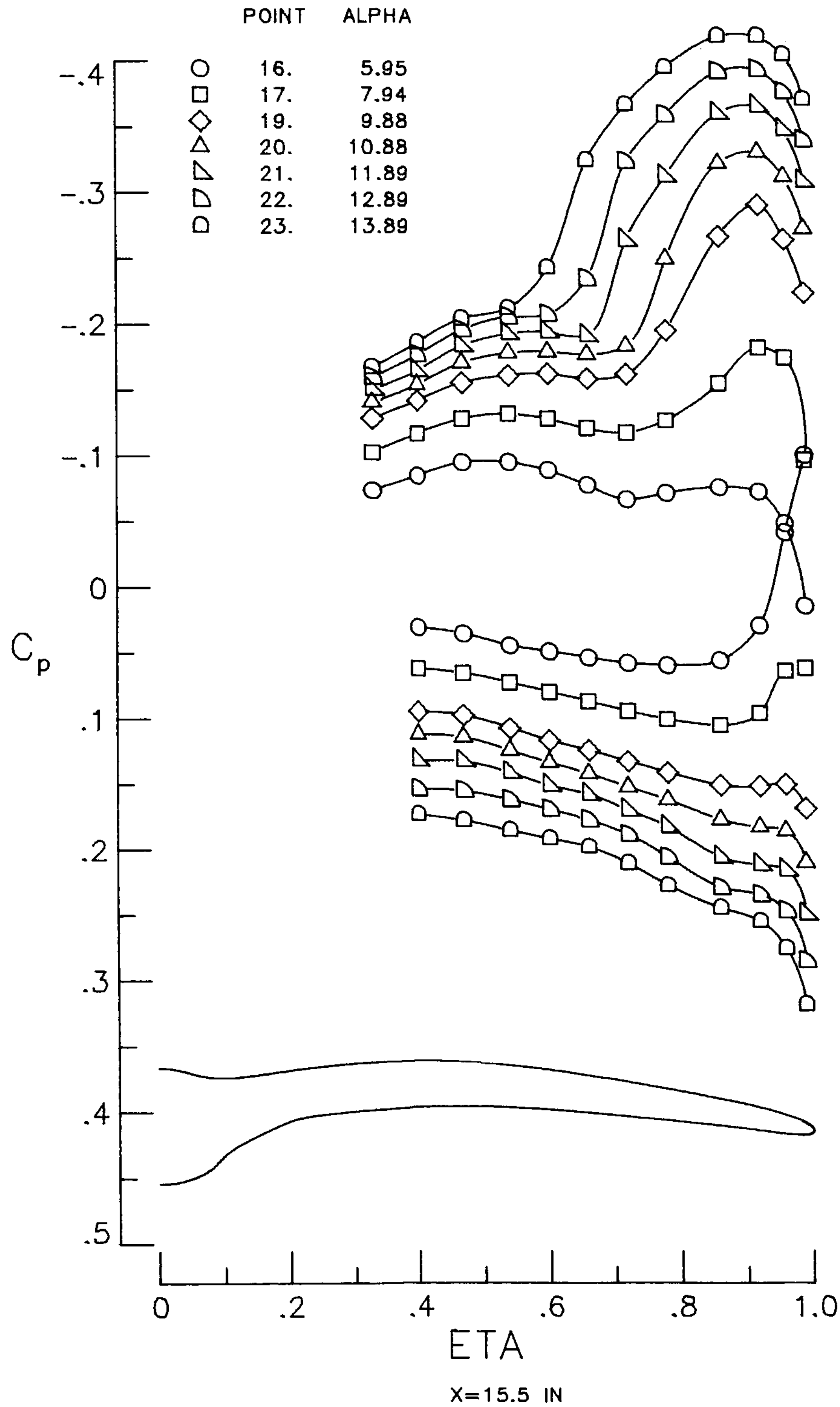
EXPERIMENTAL DATA PLOTS

The pressure-coefficient data are plotted against the nondimensionalized spanwise coordinate h (ETA in figures). The entire set of pressure-coefficient data is plotted in summary form in figures A1 and A2. Crossplots of the pressure coefficient are shown in figure A3. A summary of the longitudinal force and moment data are plotted in figures A4 and A5.



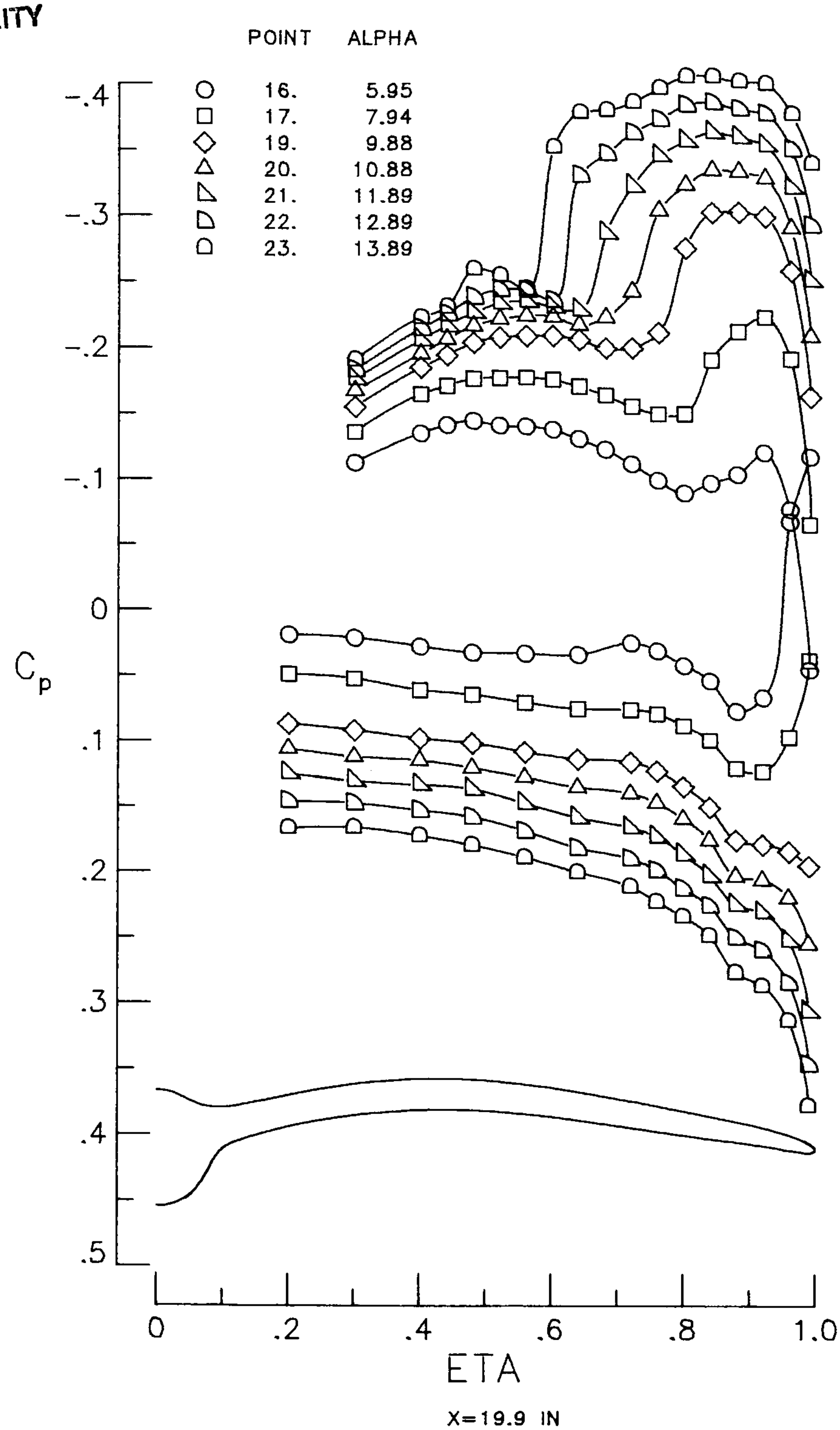
(a) M = 1.58.

Figure A1.- Pressure-coefficient data for wing with basic leading edge.



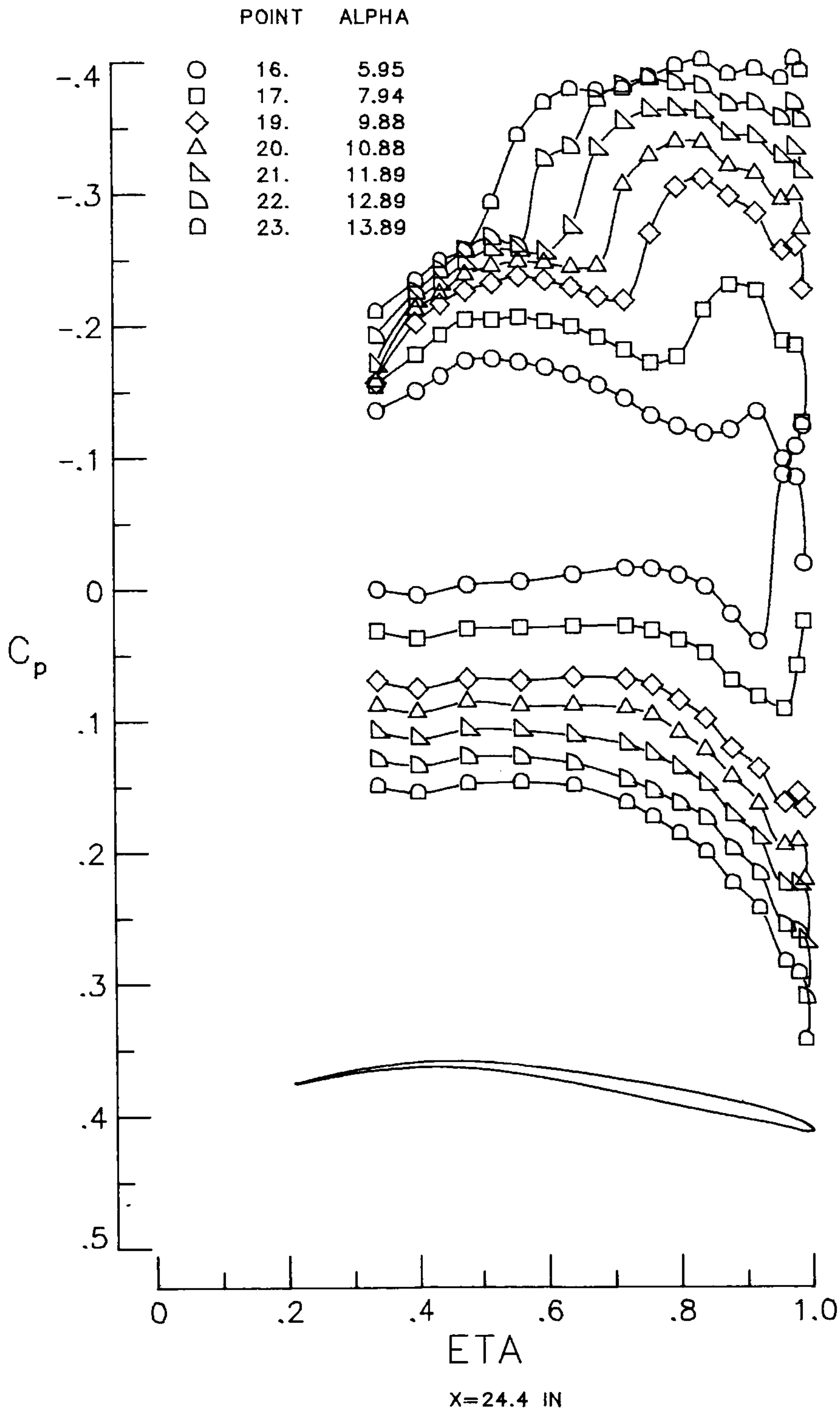
(a) Continued.

Figure A1.- Continued.



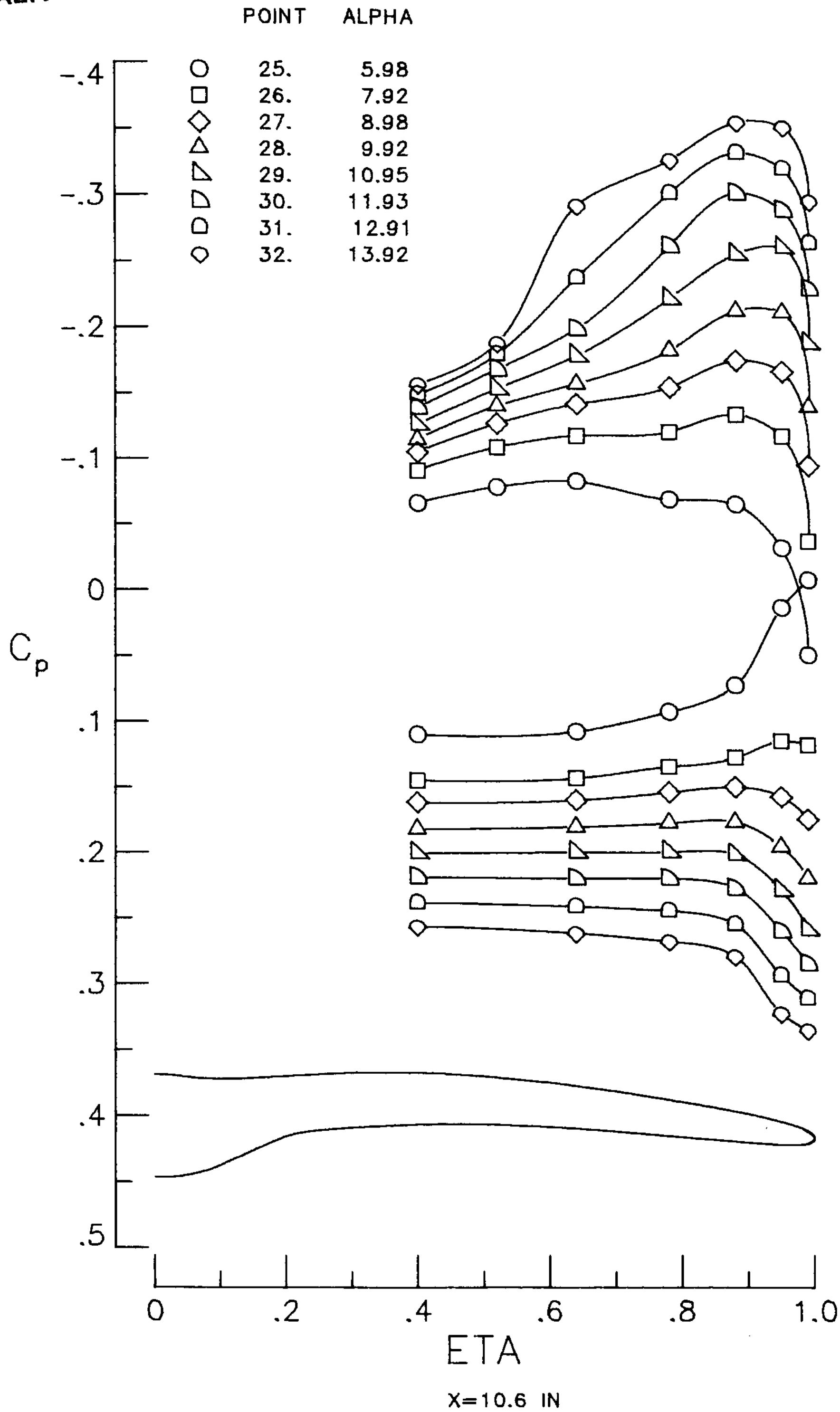
(a) Continued.

Figure A1.- Continued.



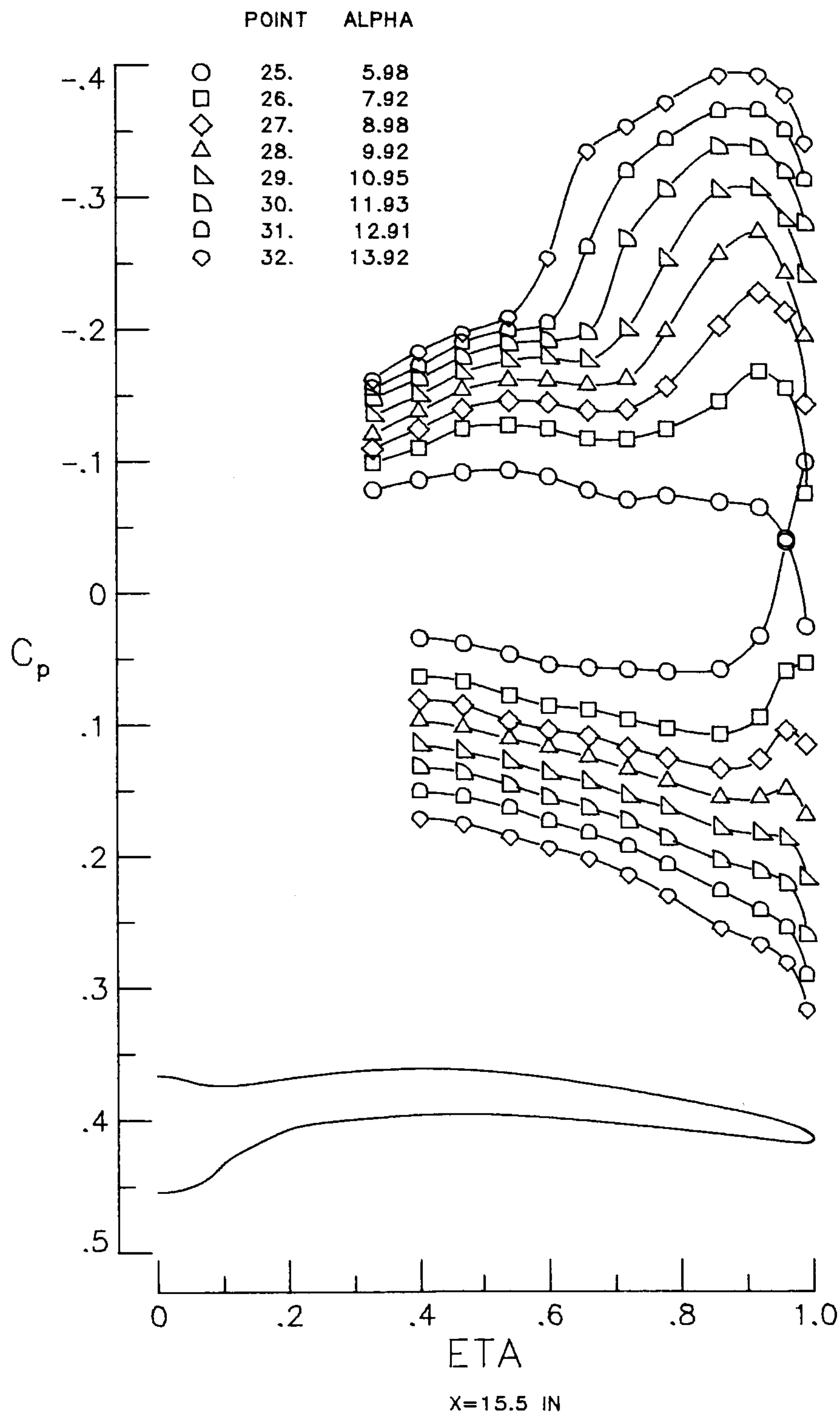
(a) Concluded.

Figure A1.- Continued.



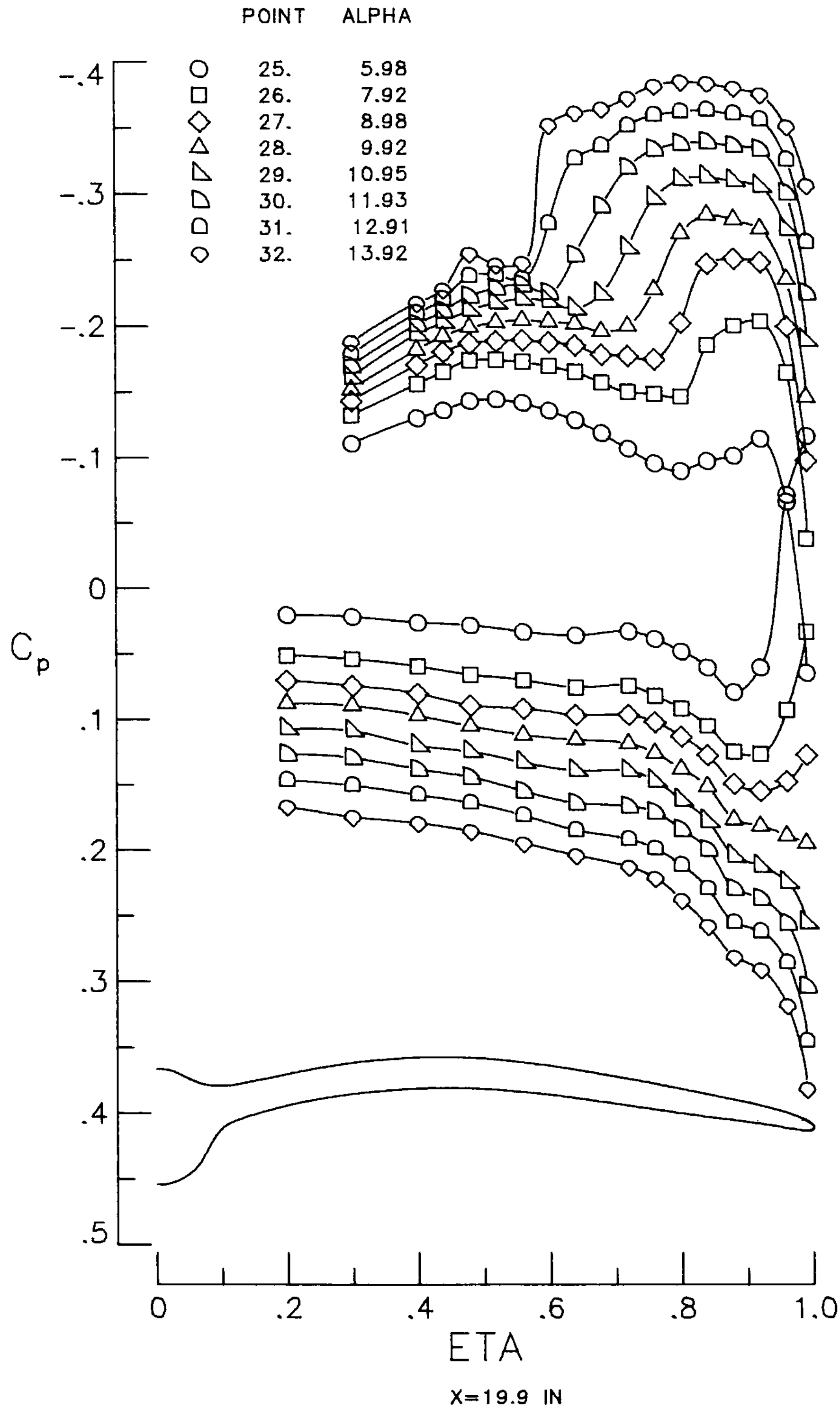
(b) M = 1.62.

Figure A1.- Continued.



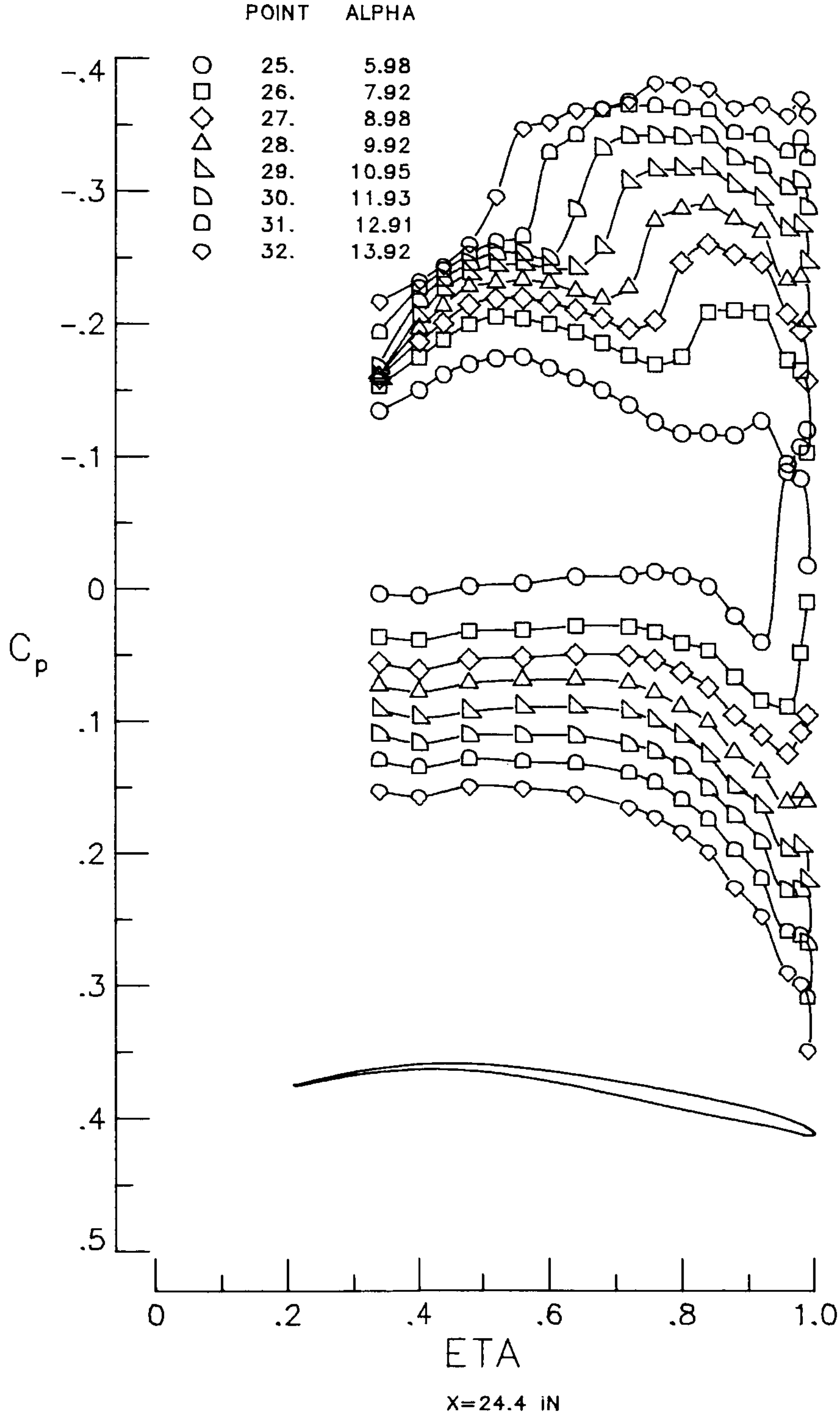
(b) Continued.

Figure A1.- Continued.



(b) Continued.

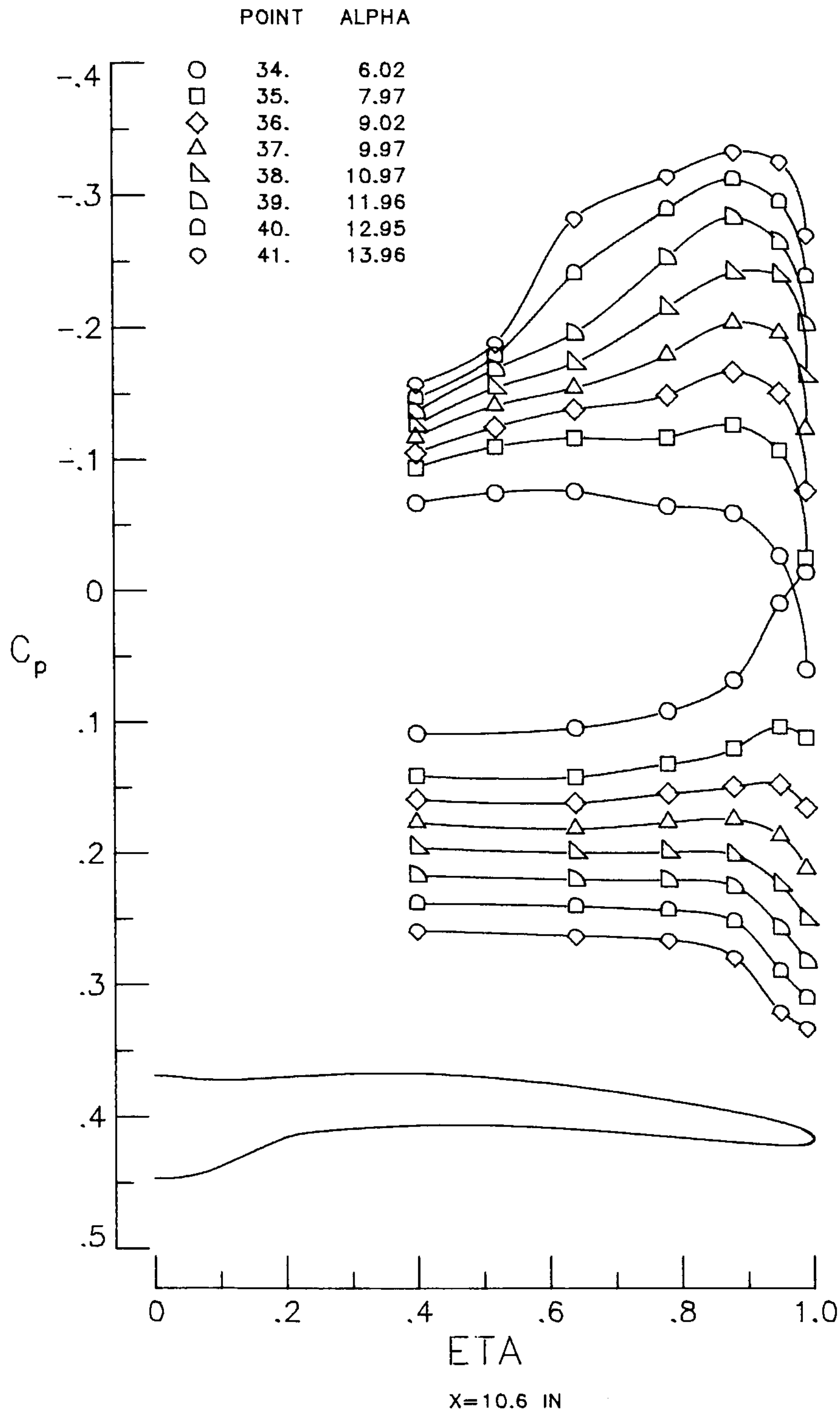
Figure A1.- Continued.



(b) Concluded.

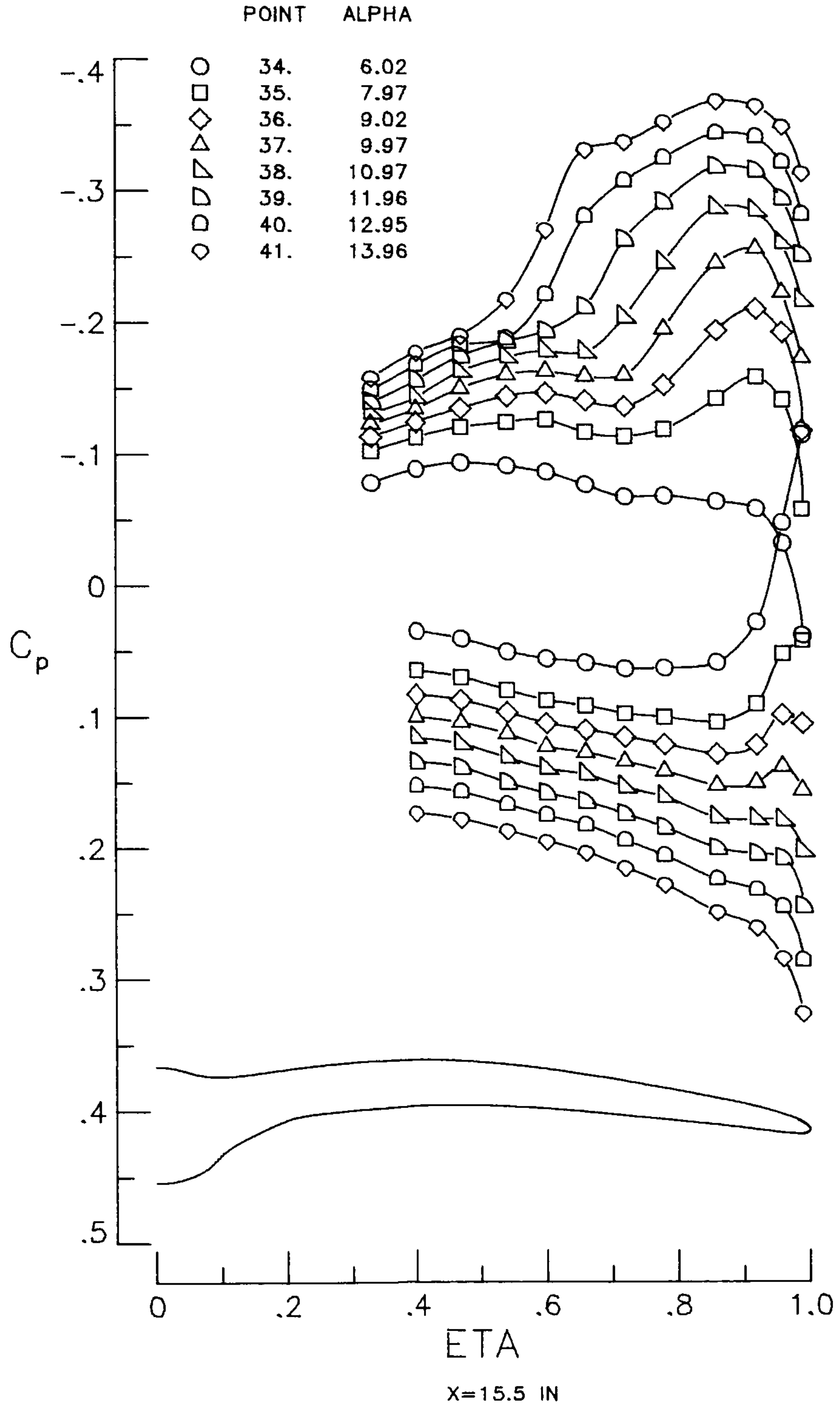
Figure A1.- Continued.

ORIGINAL PAGE IS
OF POOR QUALITY



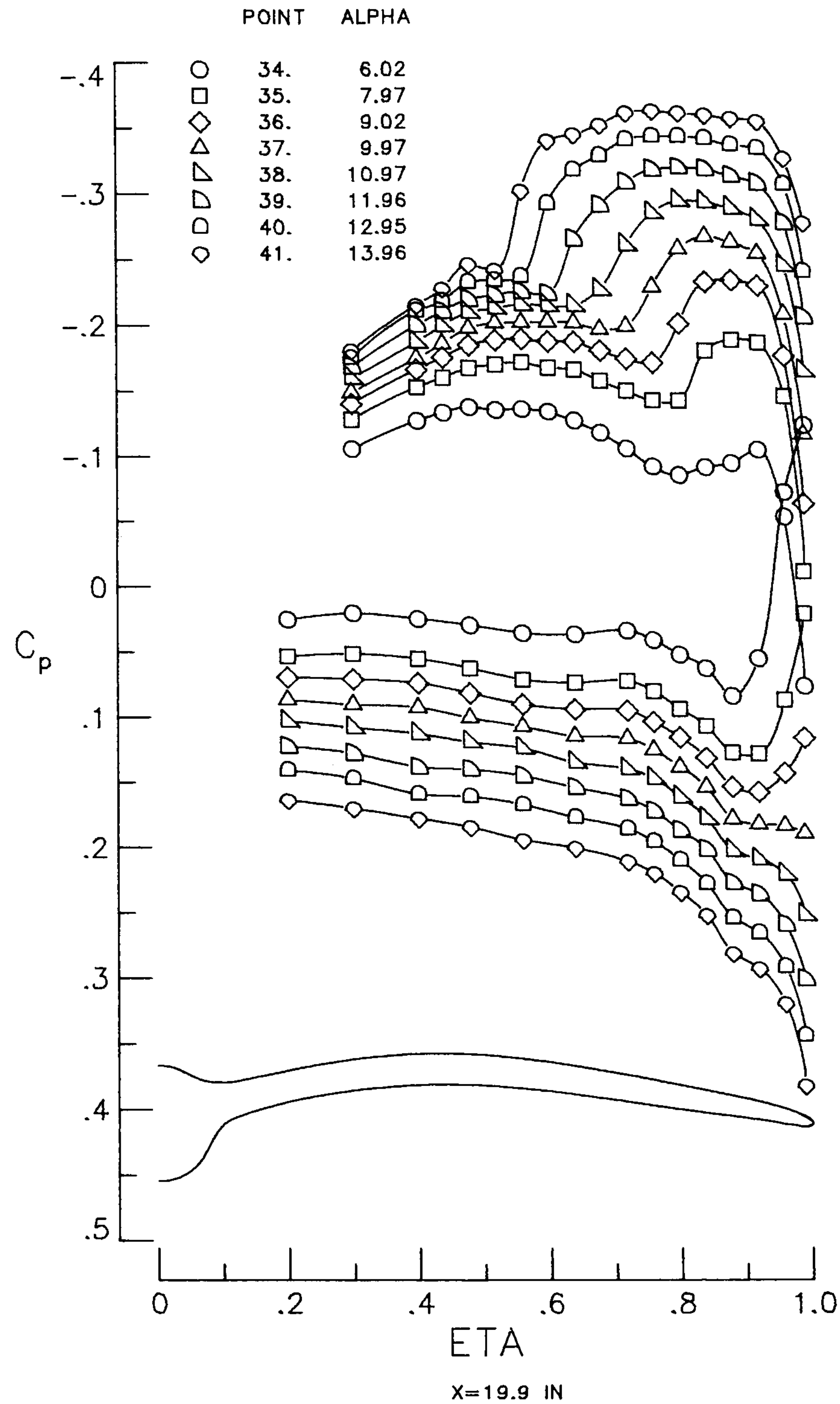
(c) M = 1.66.

Figure A1.- Continued.



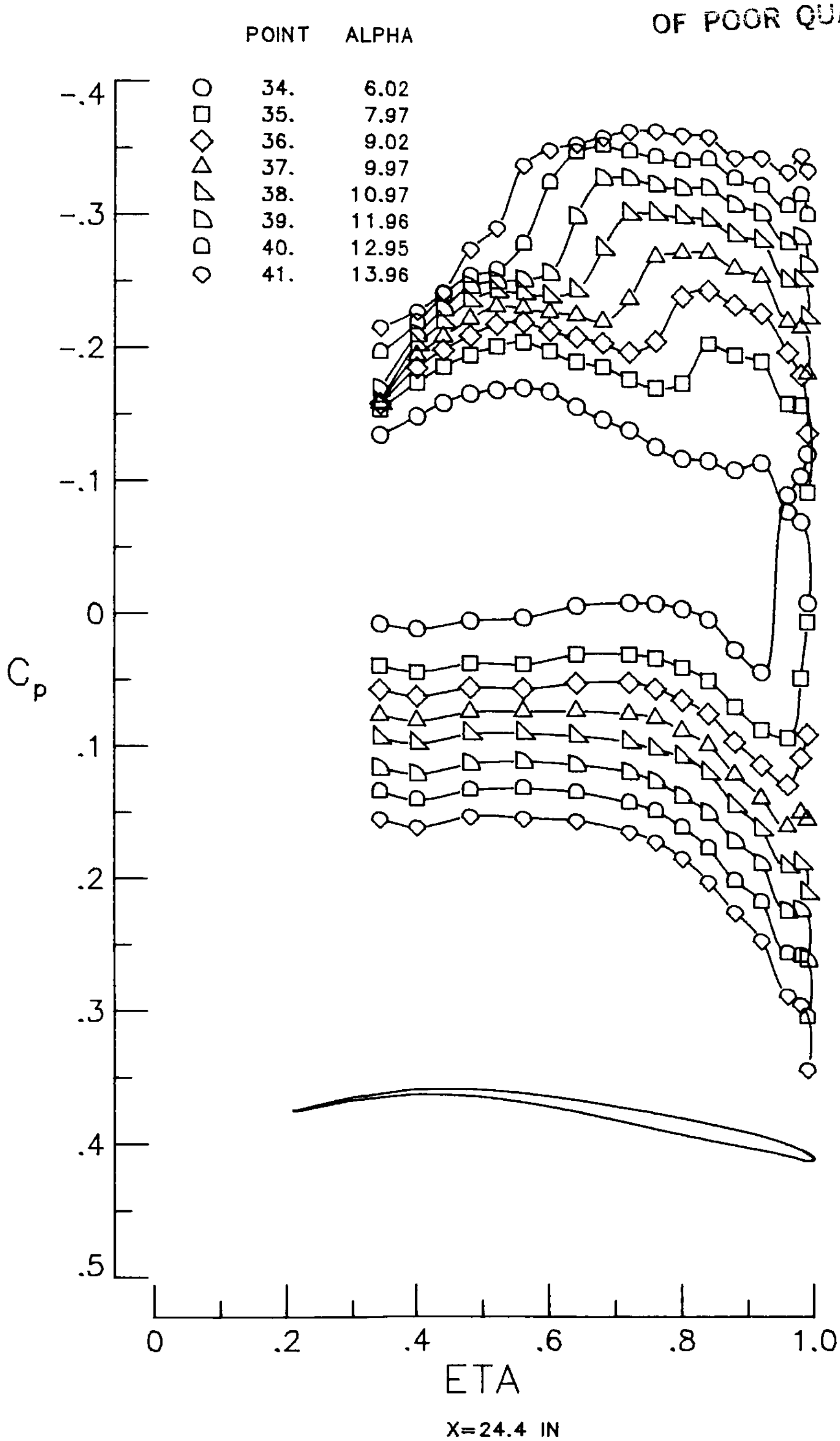
(c) Continued.

Figure A1.- Continued.



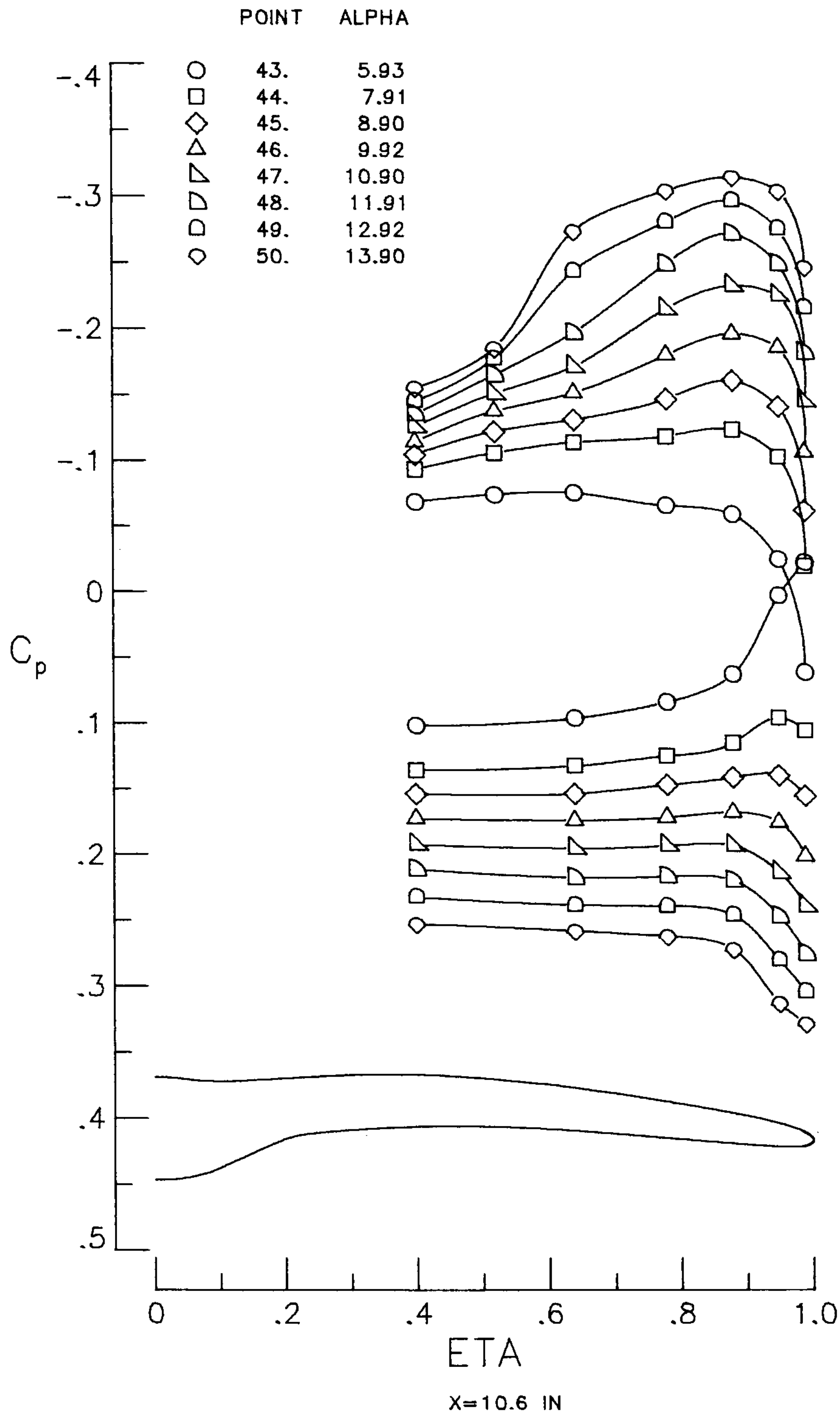
(c) Continued.

Figure A1.- Continued.



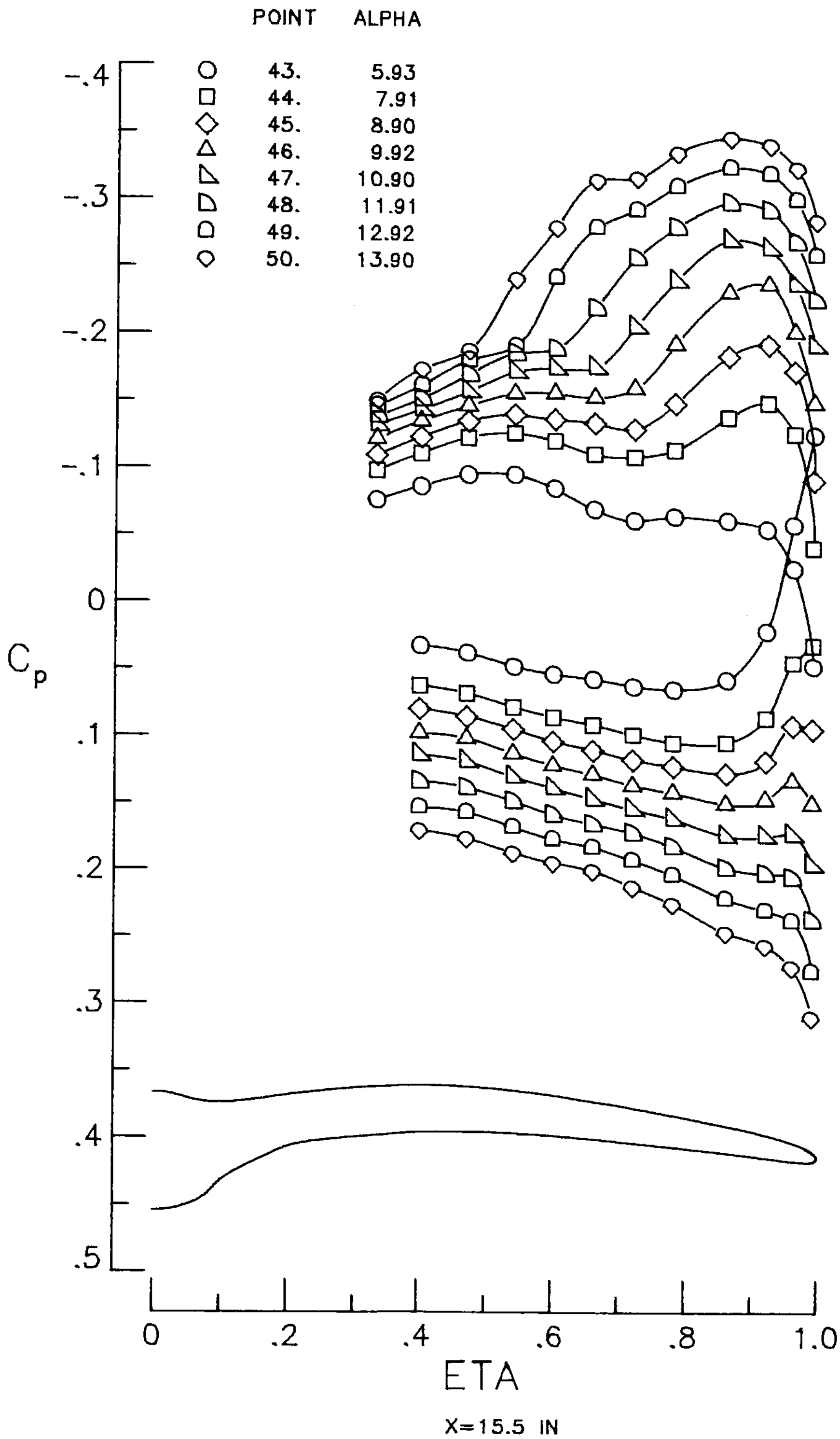
(c) Concluded.

Figure A1.- Continued.



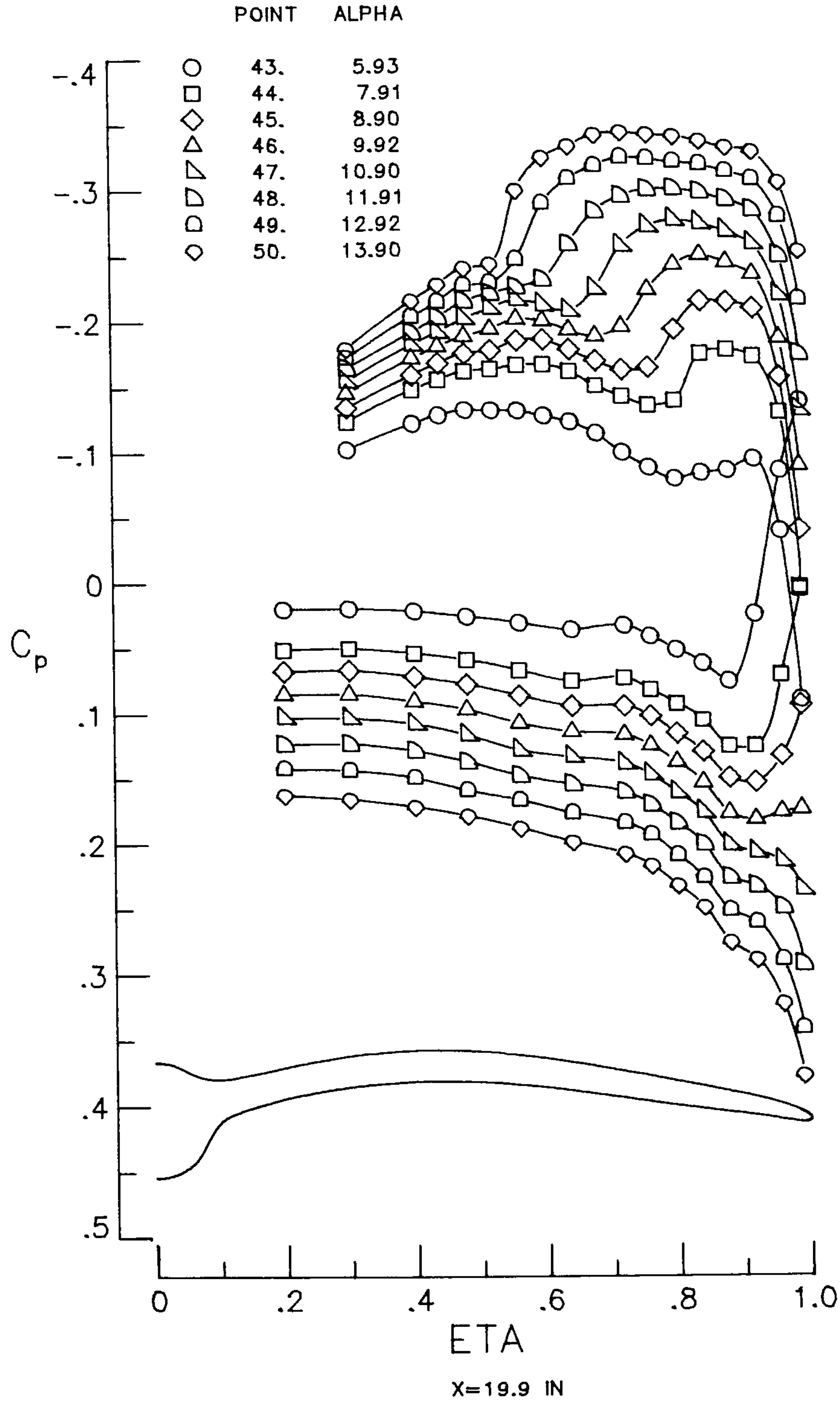
(d) M = 1.70.

Figure A1.- Continued.



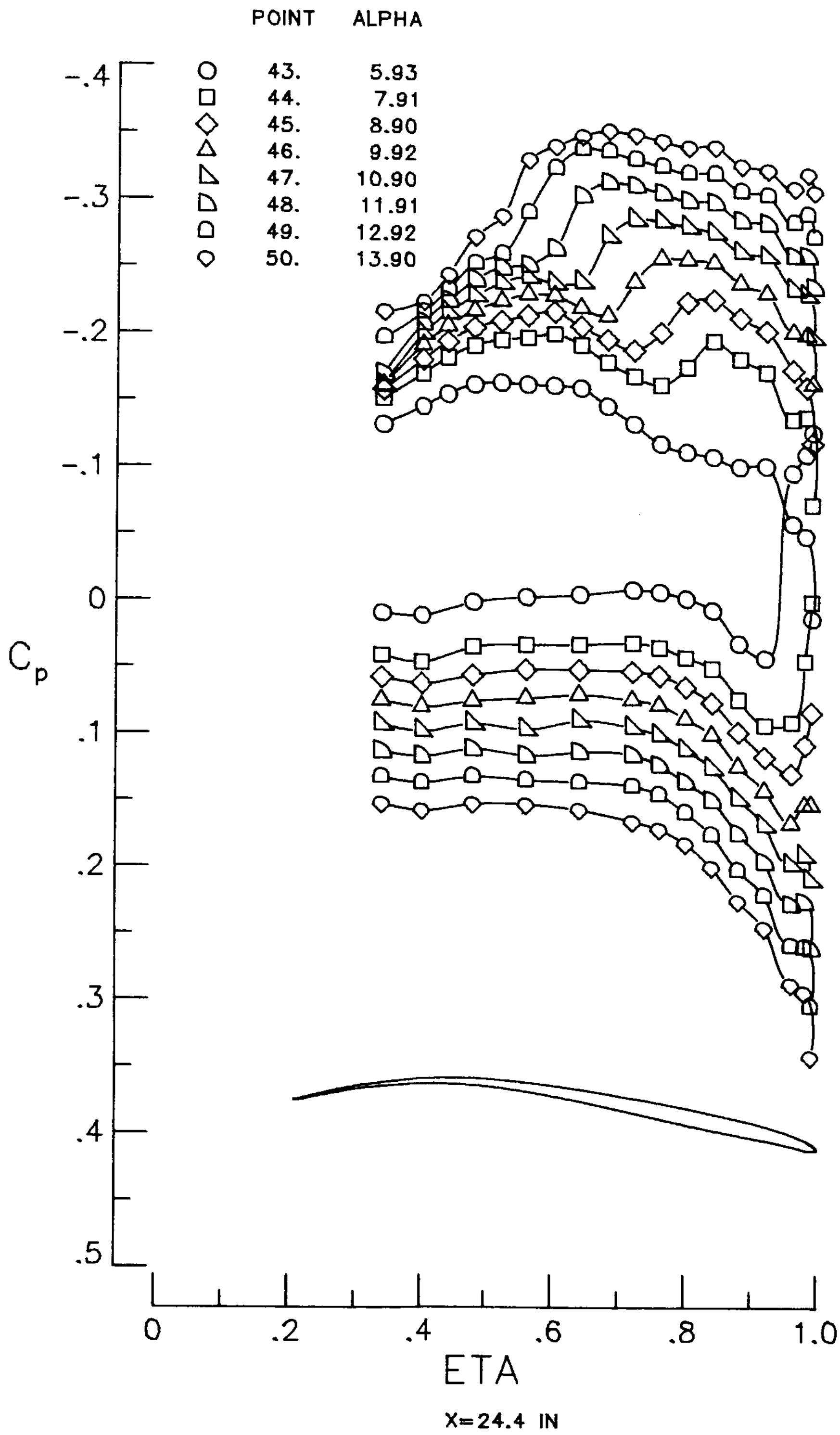
(d) Continued.

Figure A1.- Continued.



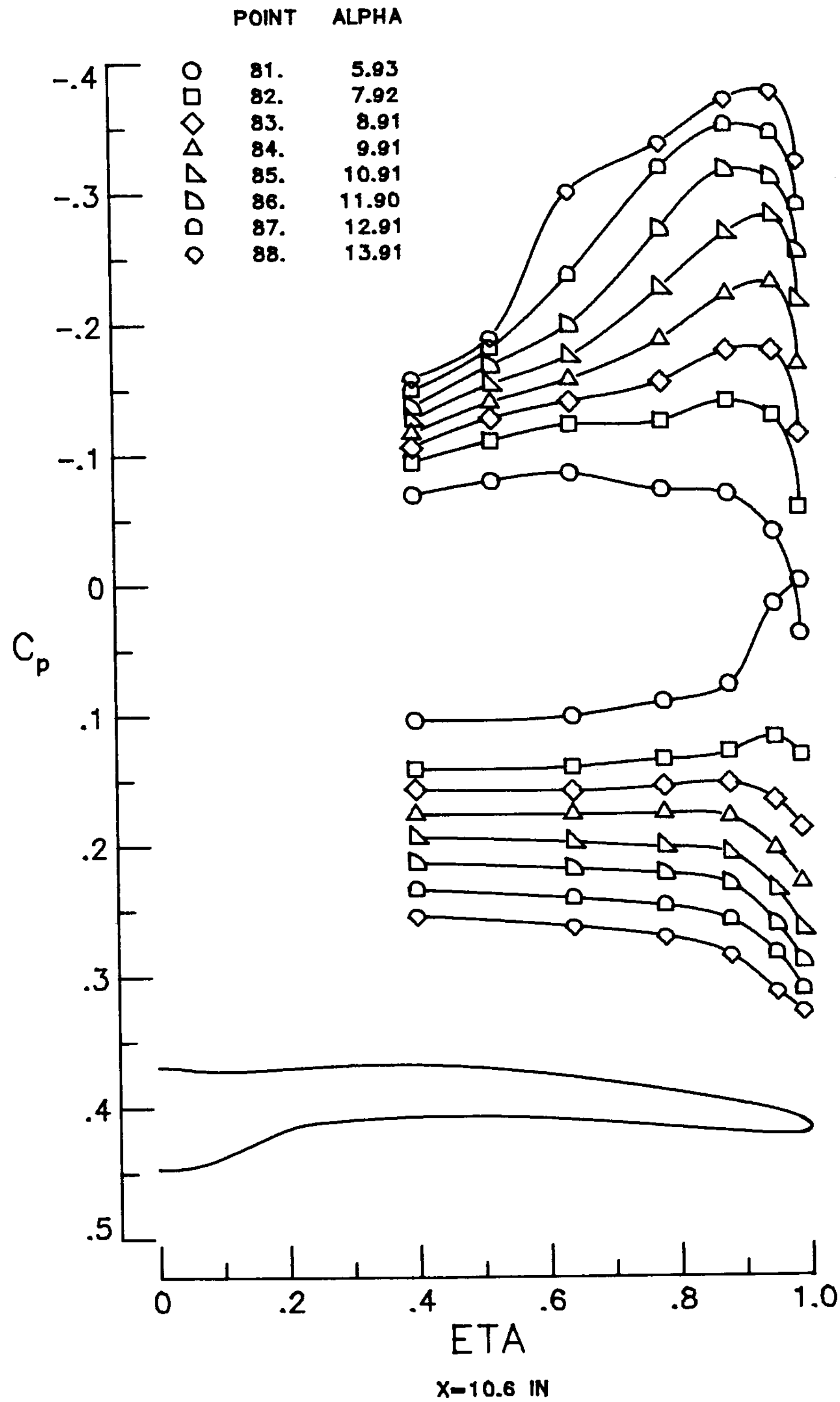
(d) Continued.

Figure A1.- Continued.



(d) Concluded.

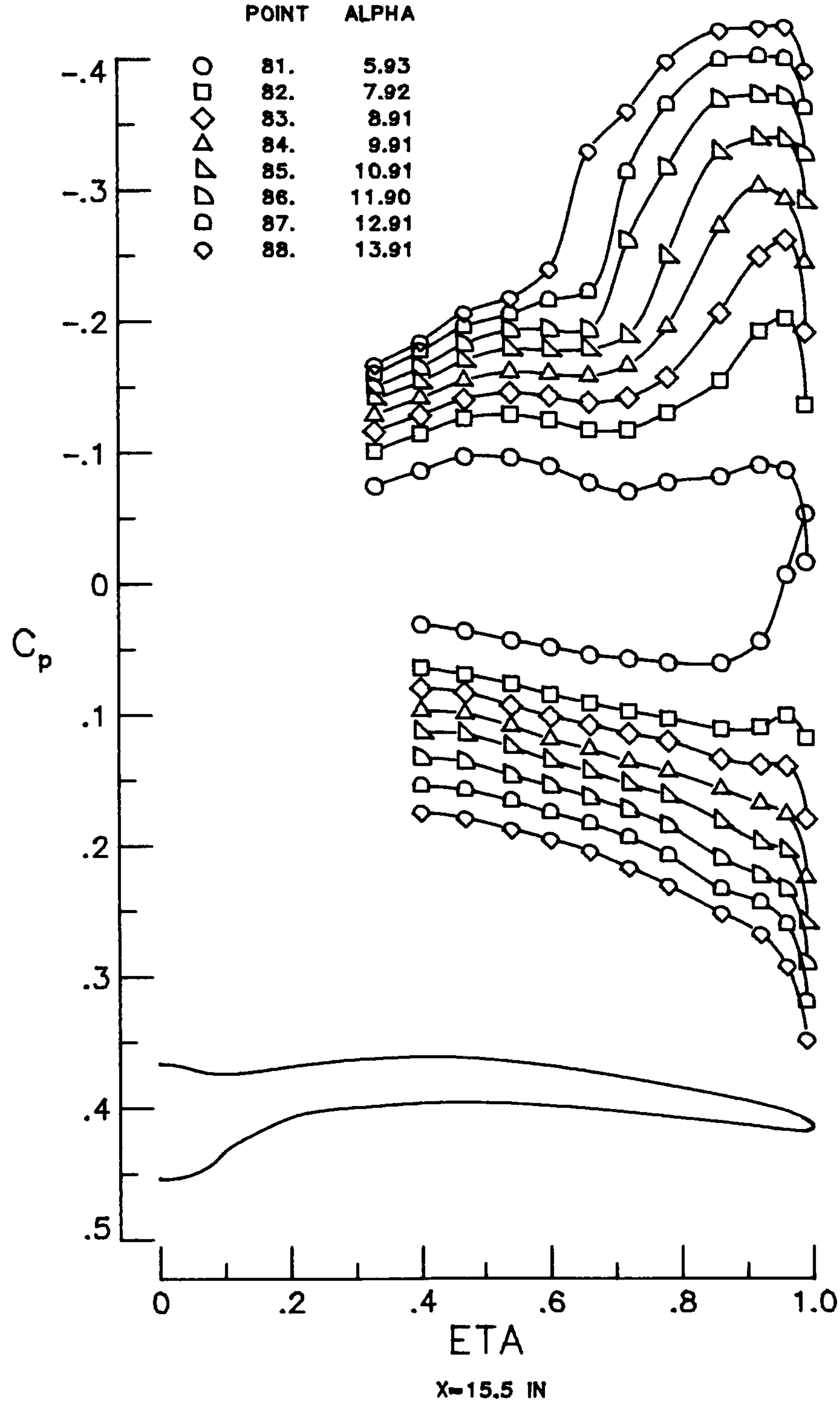
Figure A1.- Concluded.



(a) M = 1.58.

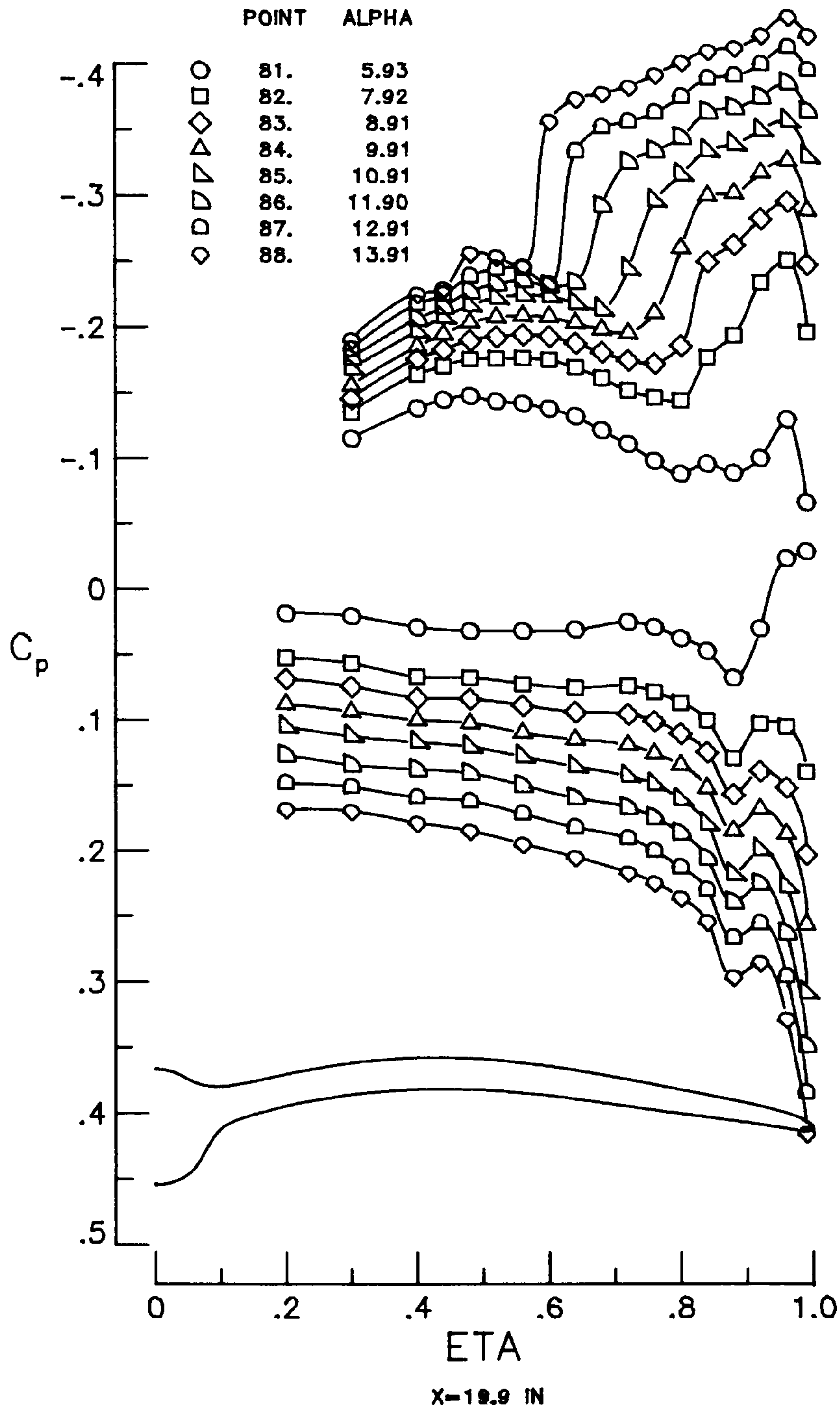
Figure A2.- Pressure-coefficient data for wing with alternate leading edge.

ORIGINAL PAGE IS
OF POOR QUALITY



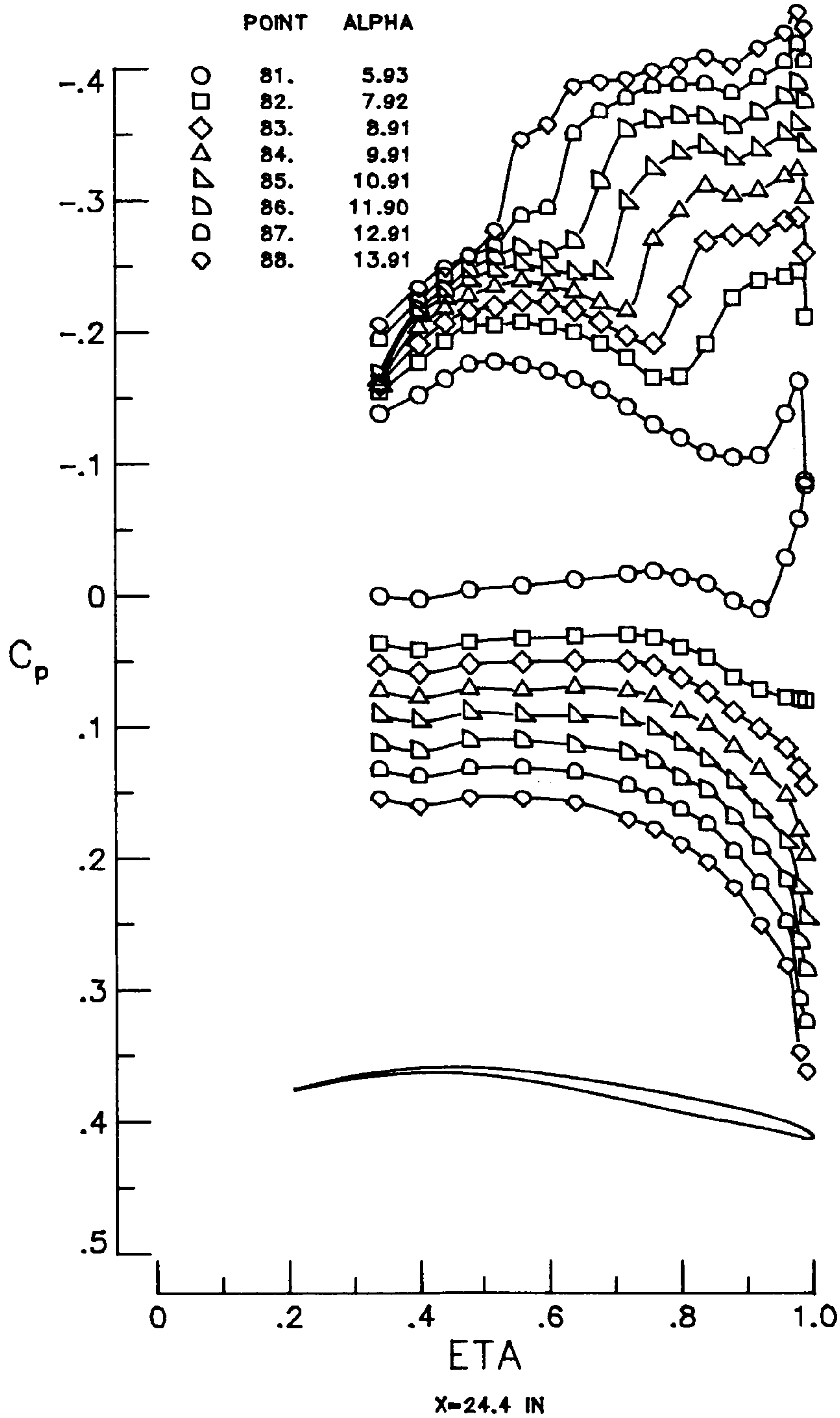
(a) Continued.

Figure A2.- Continued.



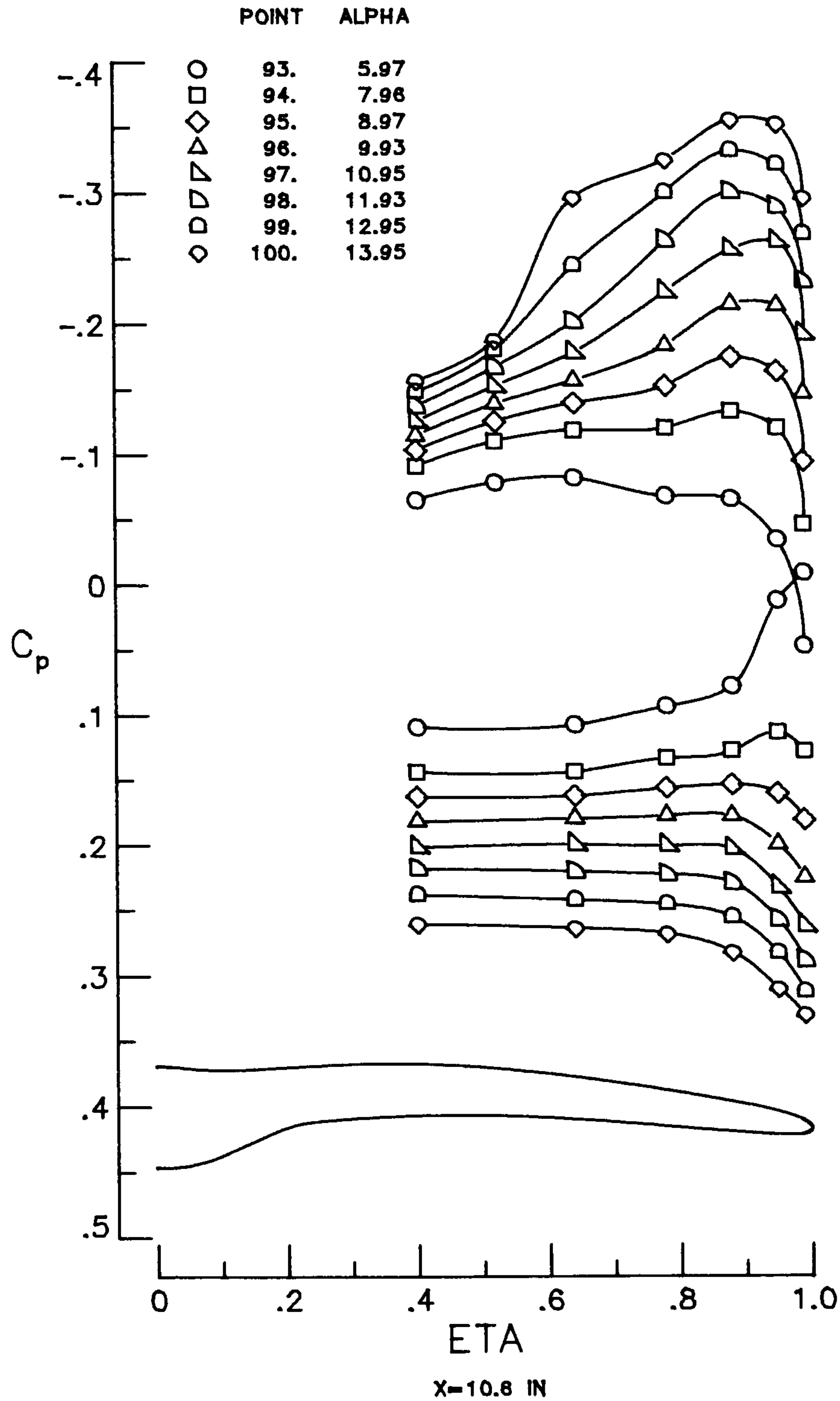
(a) Continued.

Figure A2.- Continued.



(a) Concluded.

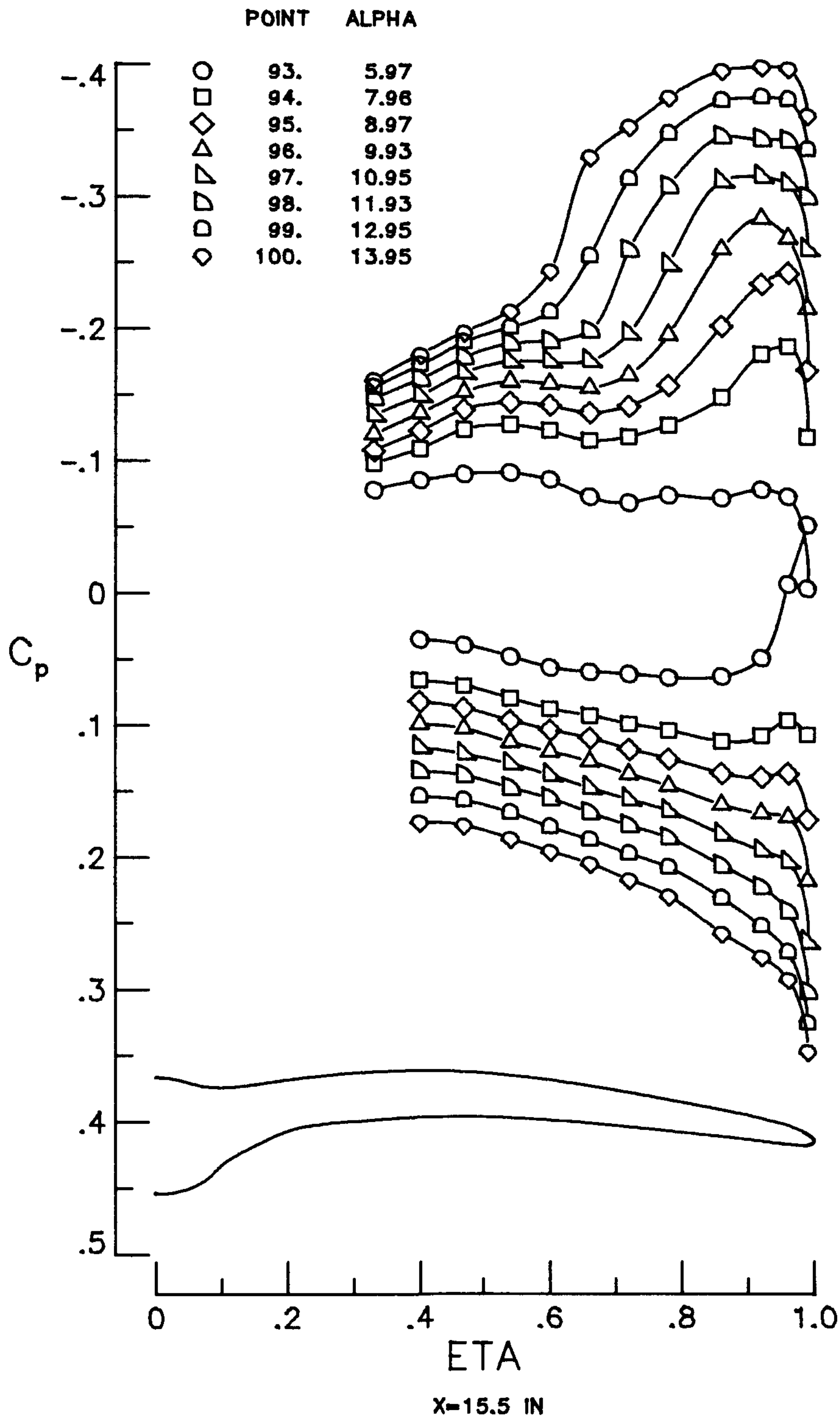
Figure A2.- Continued.



(b) M = 1.62.

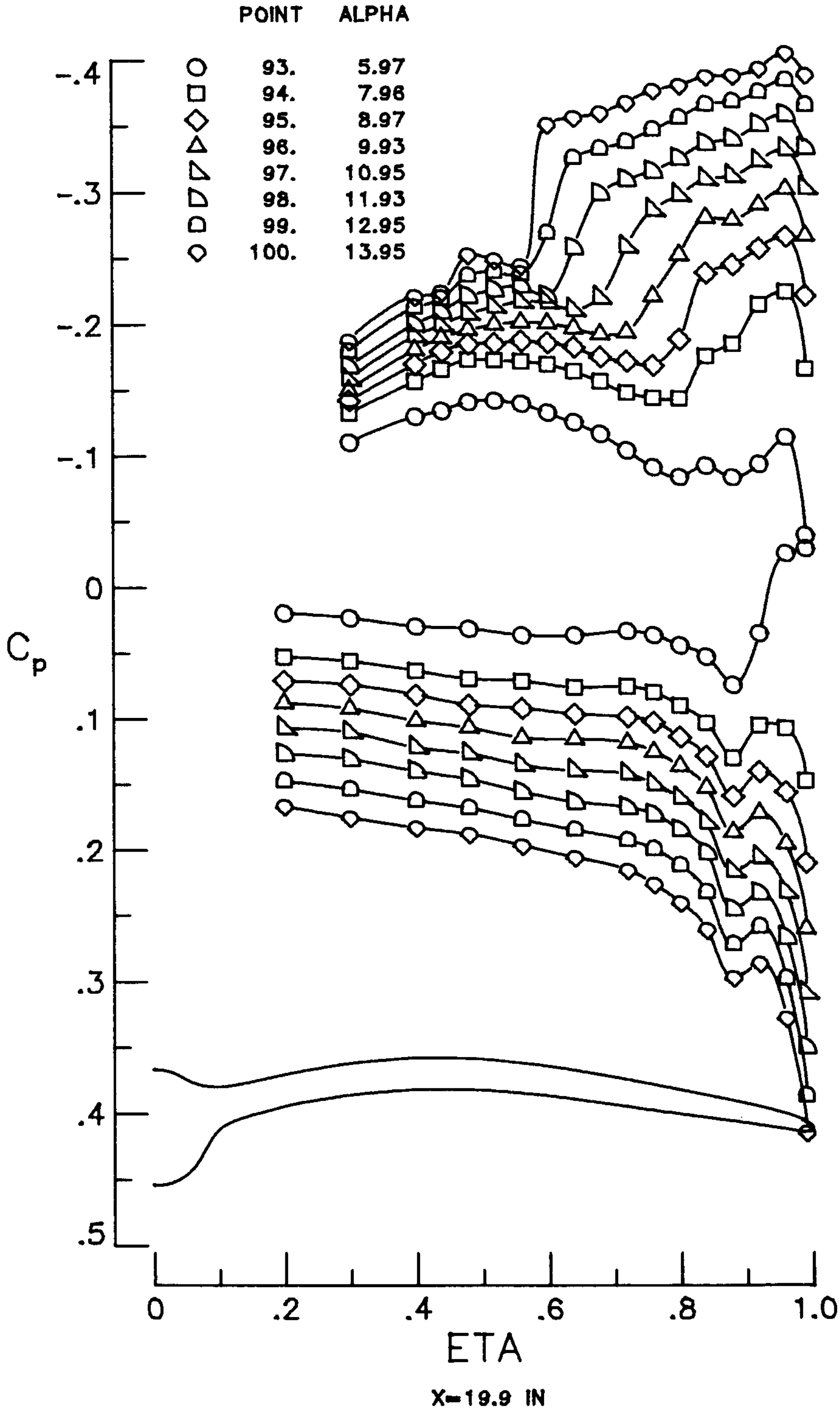
Figure A2.- Continued.

ORIGINAL PAGE IS
OF POOR QUALITY



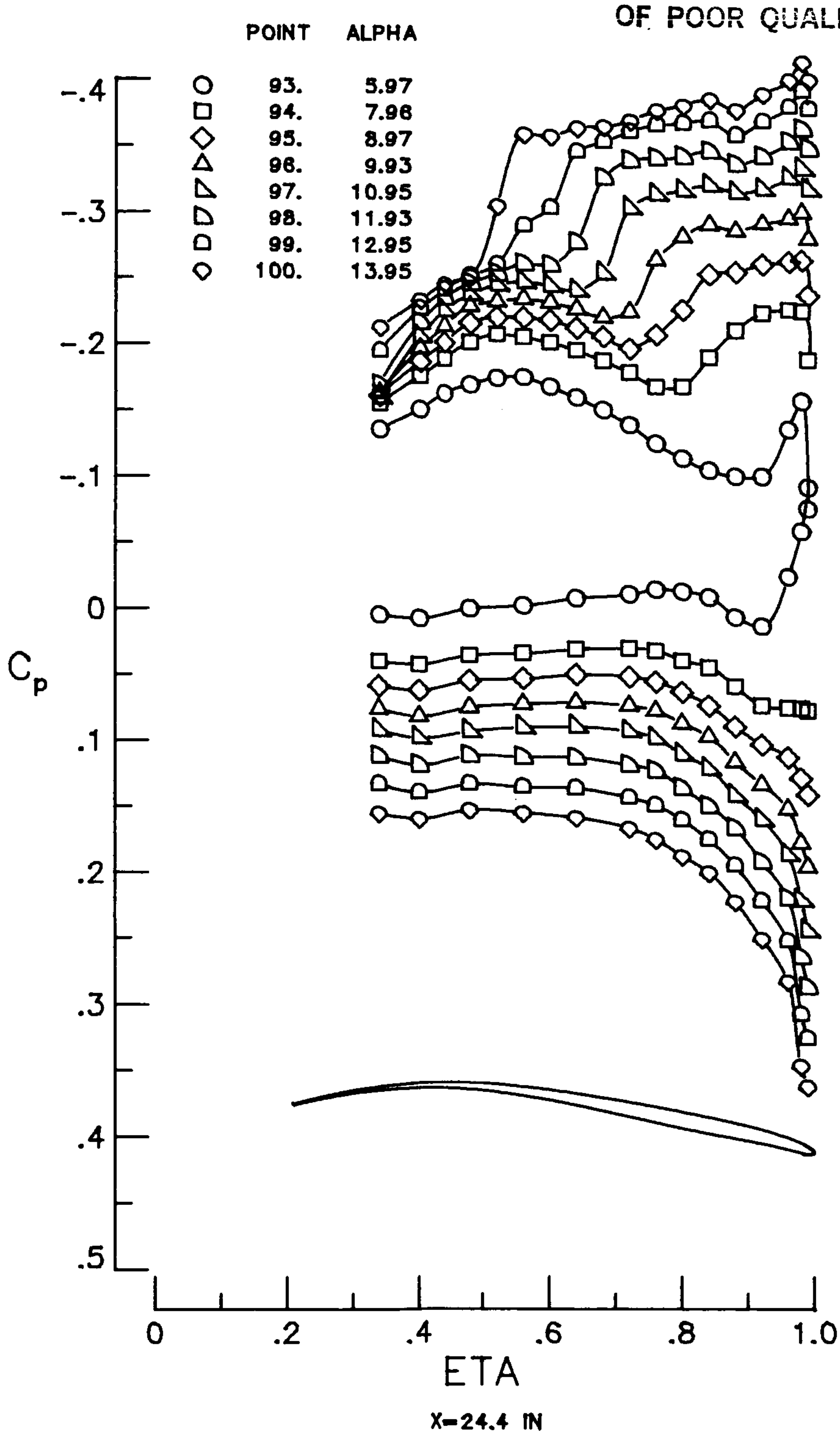
(b) Continued.

Figure A2.- Continued.



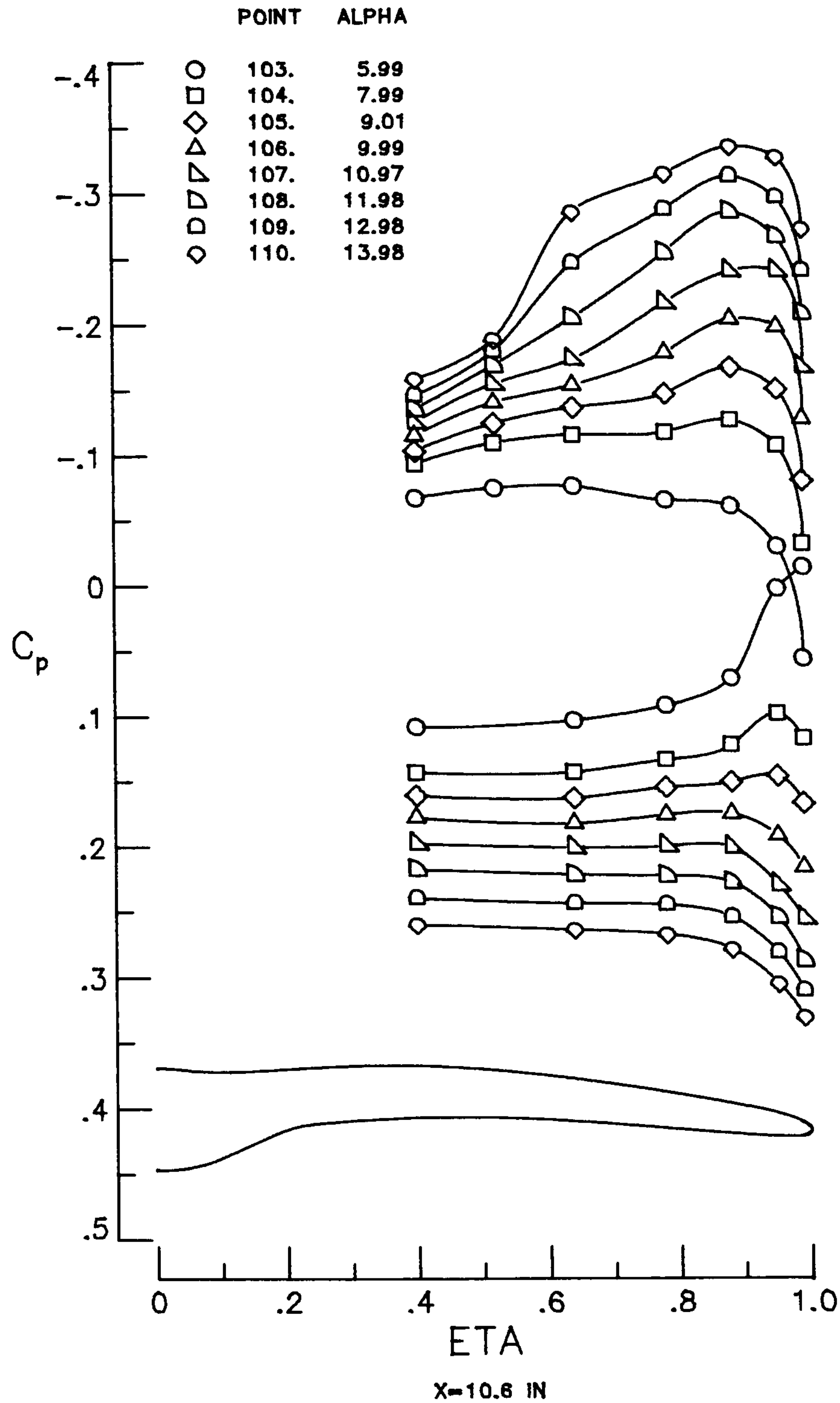
(b) Continued.

Figure A2.- Continued.



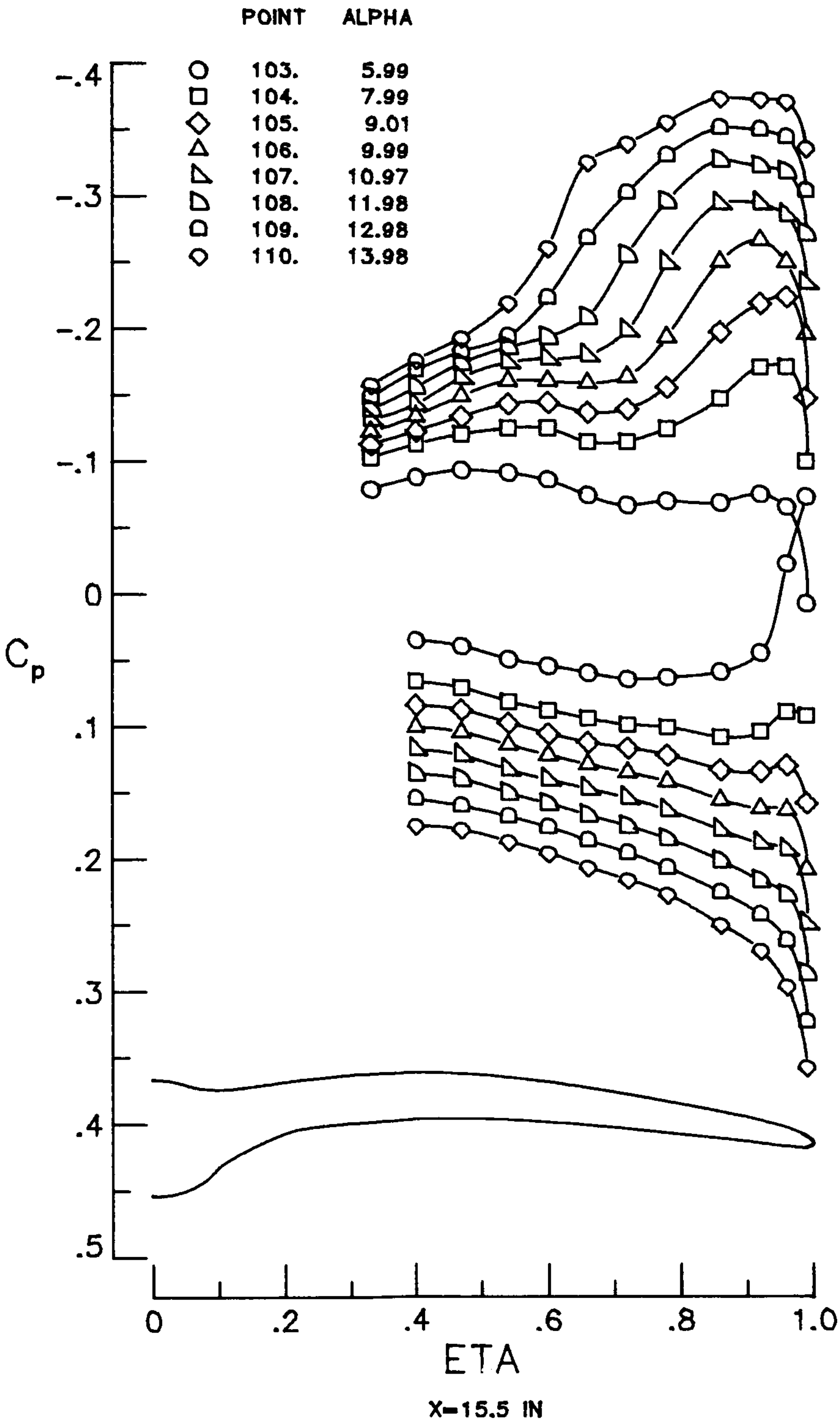
(b) Concluded.

Figure A2.- Continued.



(c) M = 1.66.

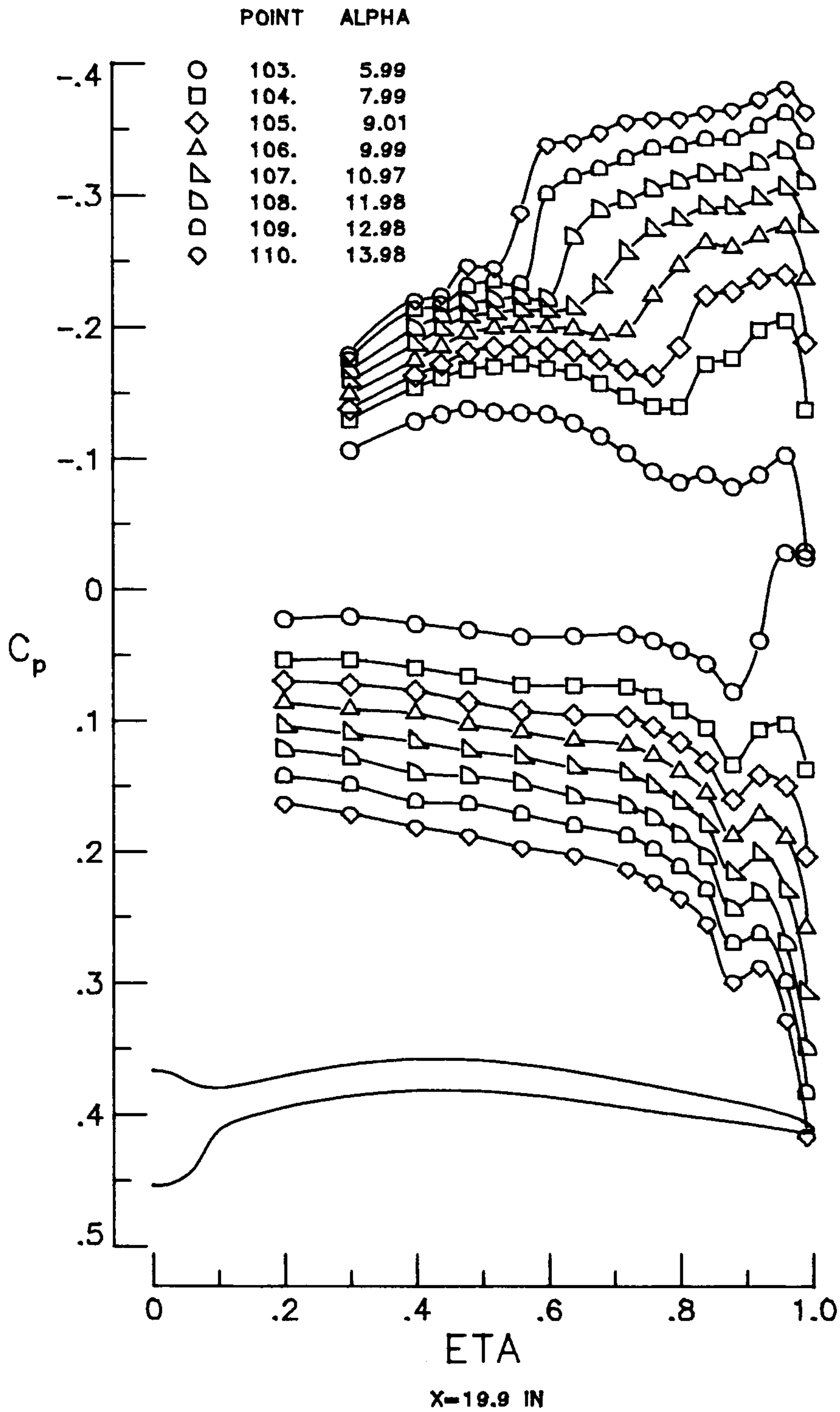
Figure A2.- Continued.



(c) Continued.

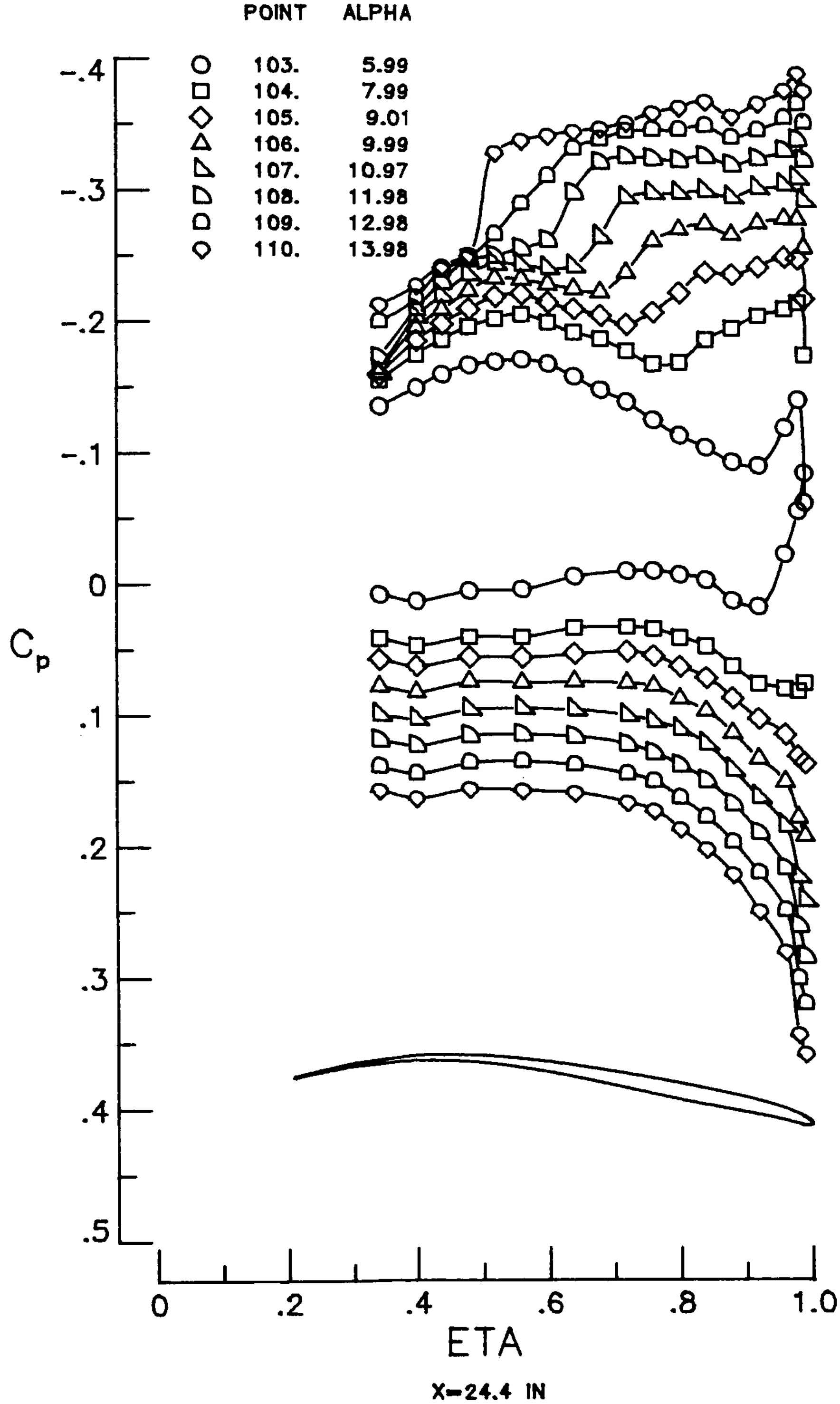
Figure A2.- Continued.

ORIGINAL PAGE IS
OF POOR QUALITY



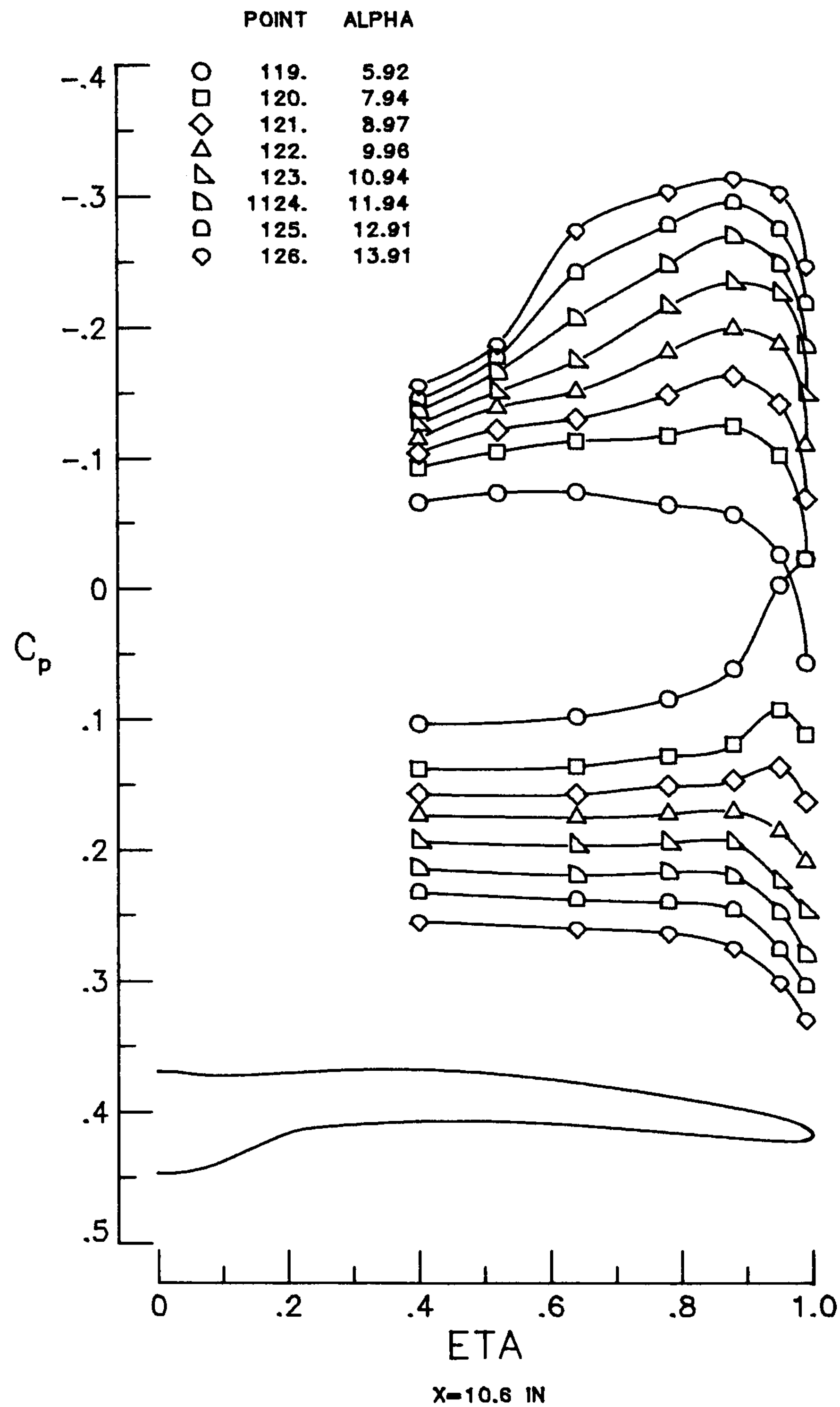
(c) Continued.

Figure A2.- Continued.



(c) Concluded.

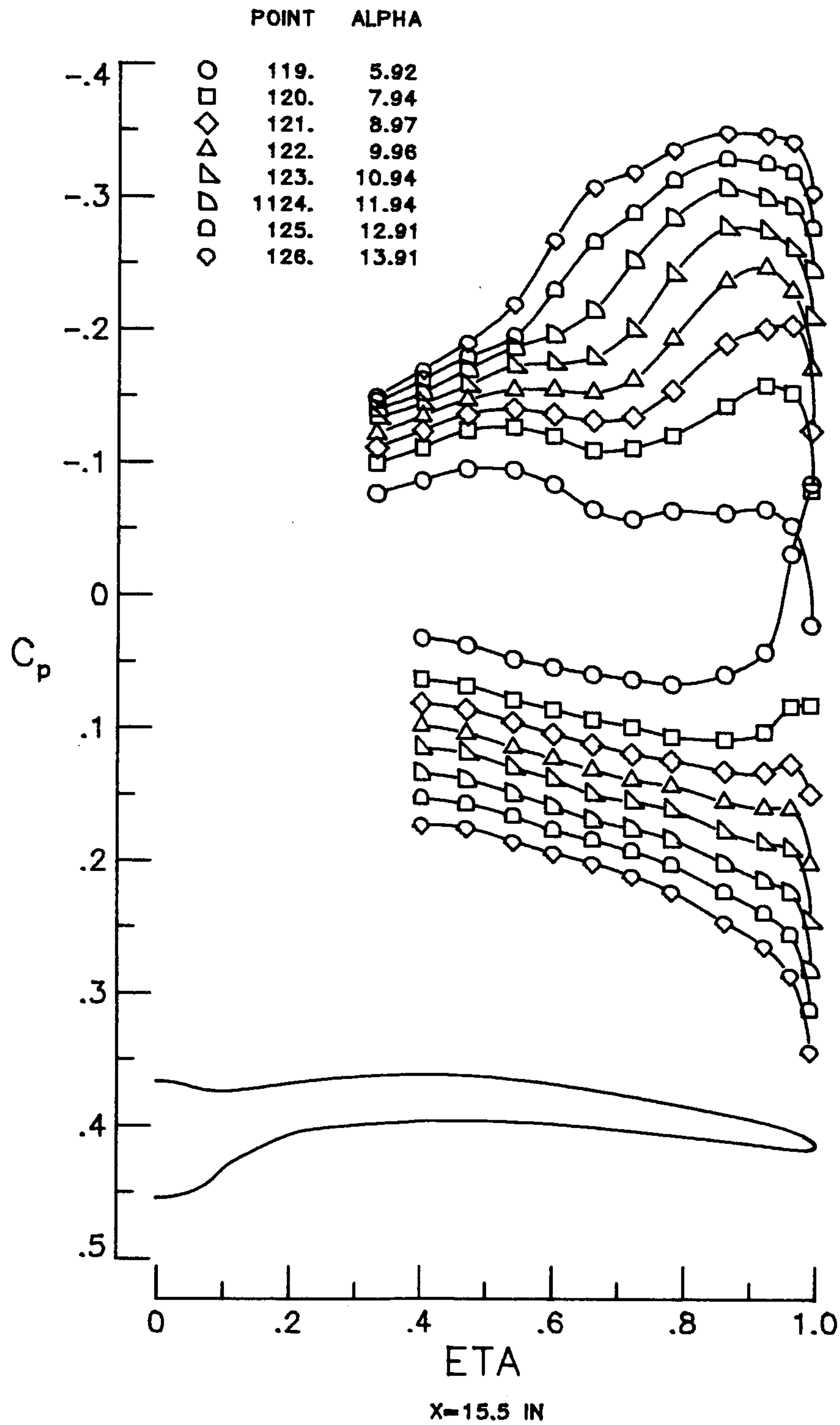
Figure A2.- Continued.



(d) M = 1.70.

Figure A2.- Continued.

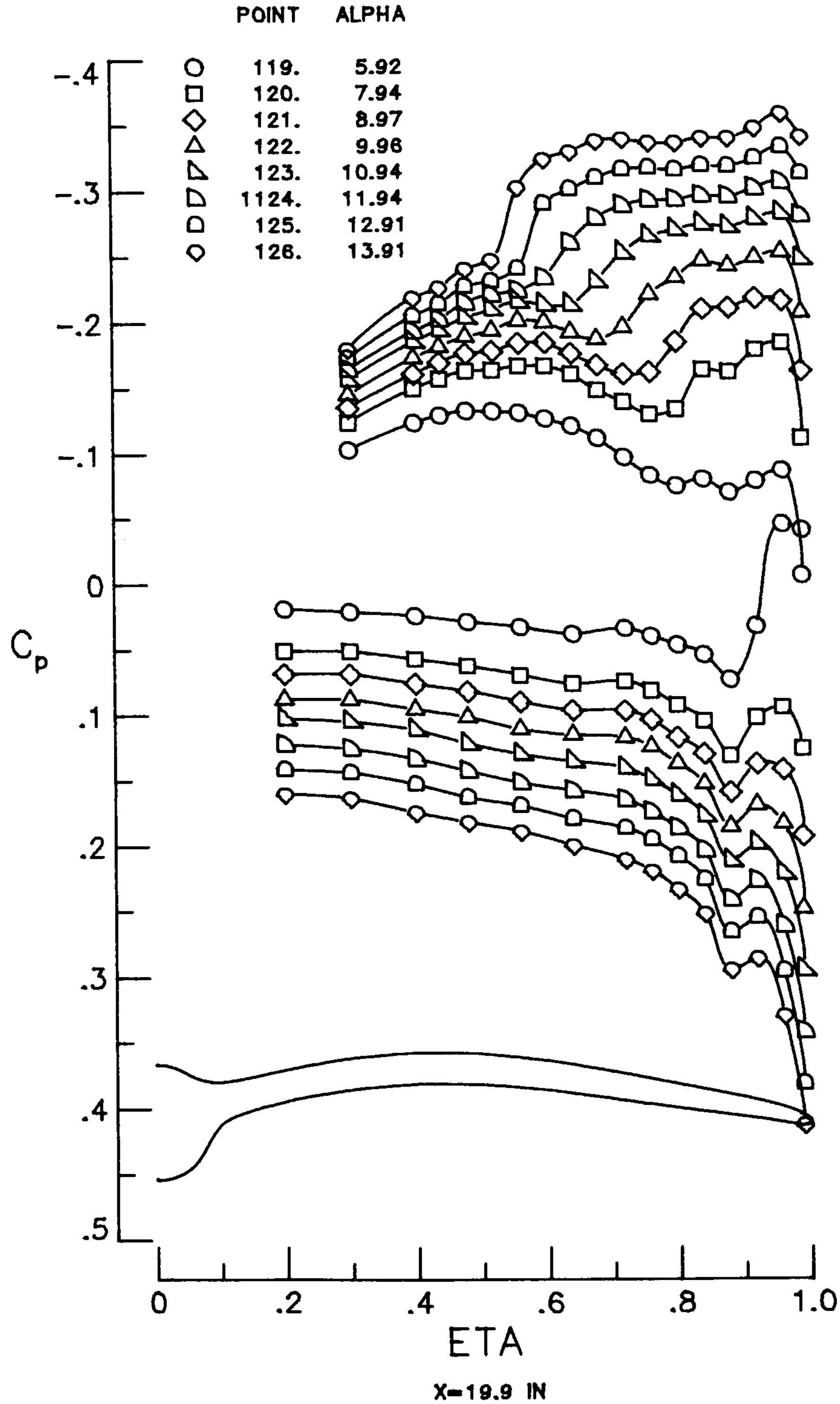
ORIGINAL PAGE IS
OF POOR QUALITY



(d) Continued.

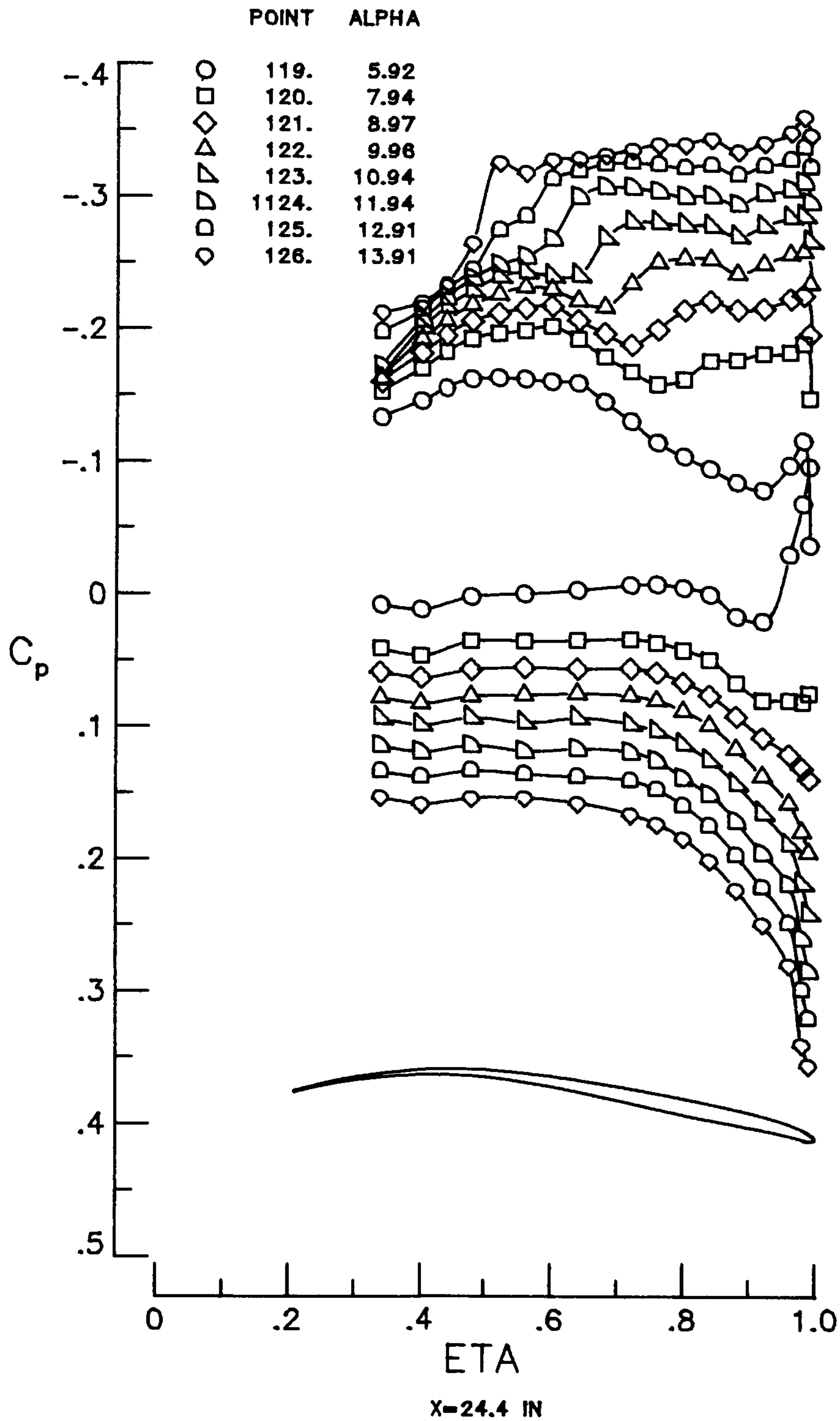
Figure A2.- Continued.

ORIGINAL PAGE IS
OF POOR QUALITY



(d) Continued.

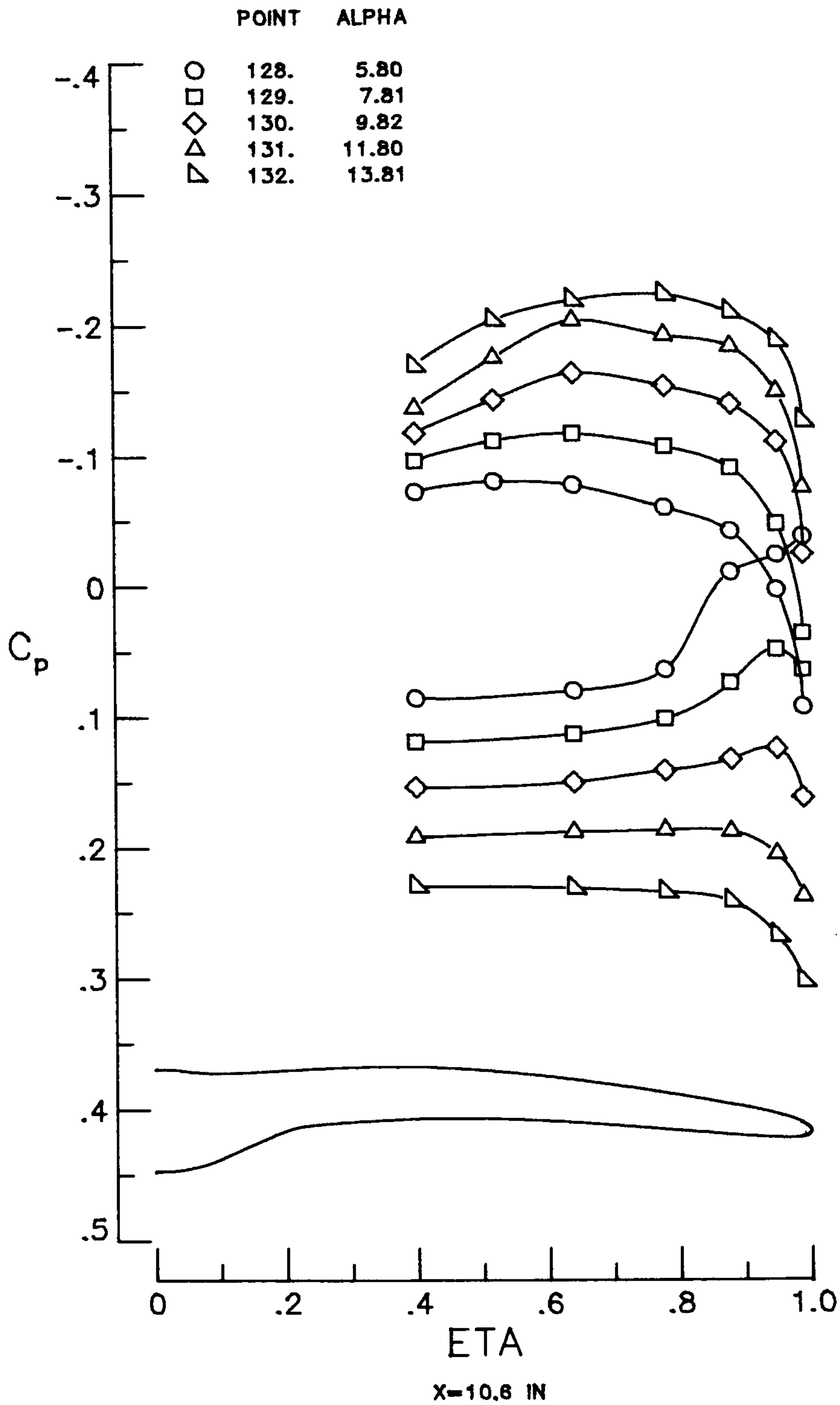
Figure A2.- Continued.



(d) Concluded.

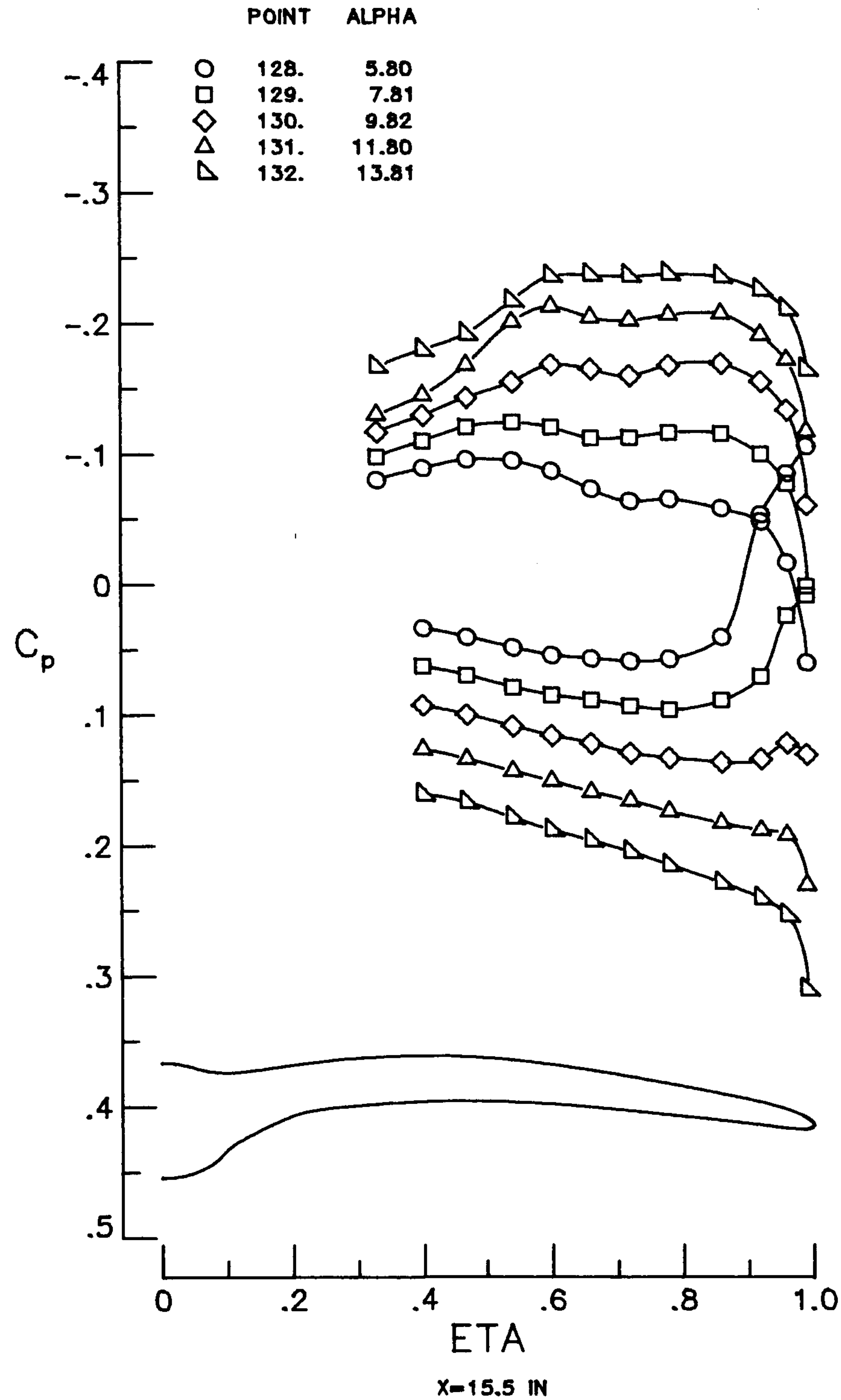
Figure A2.- Continued.

ORIGINAL PAGE IS
OF POOR QUALITY



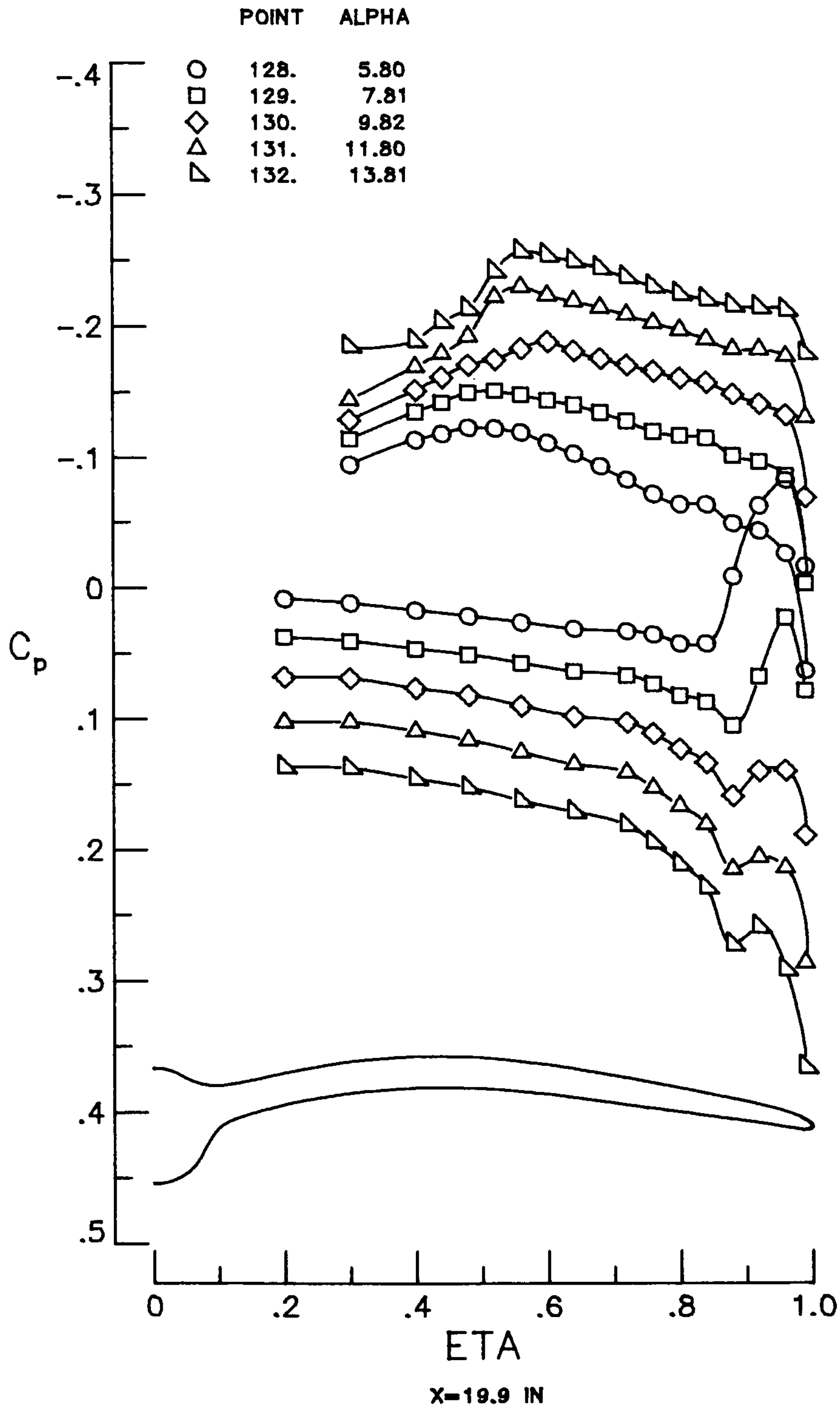
(e) M = 2.00.

Figure A2.- Continued.



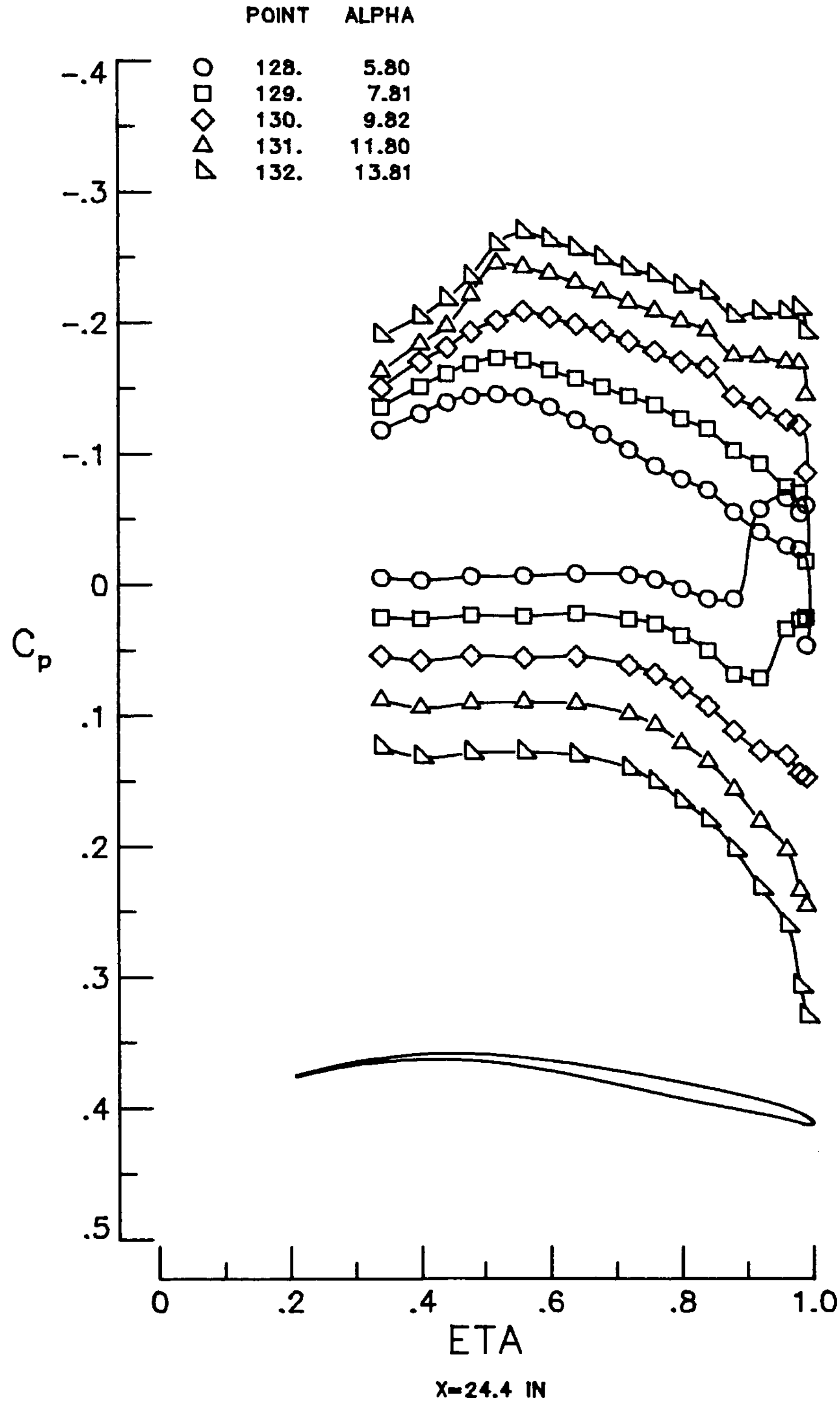
(e) Continued.

Figure A2.- Continued.



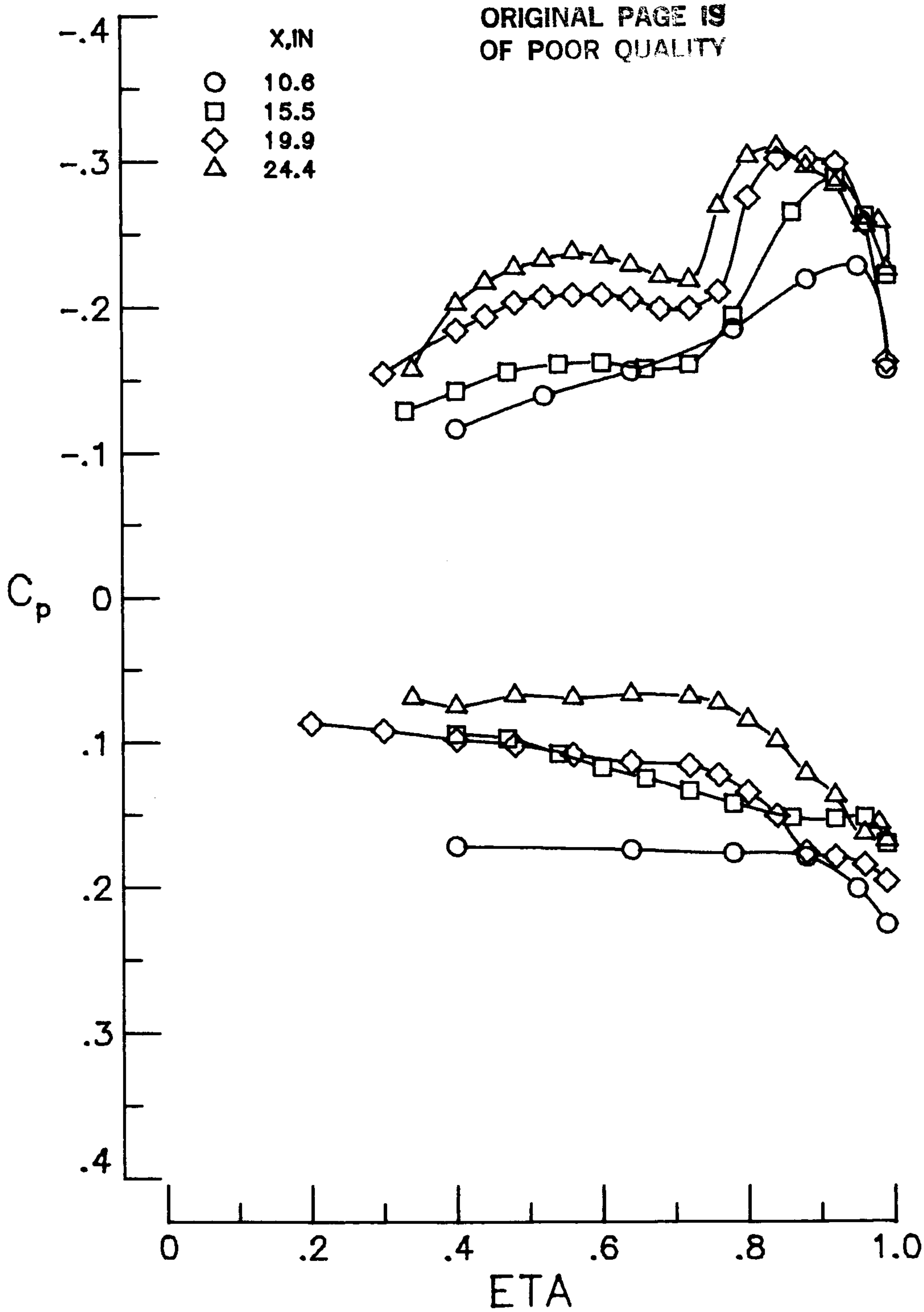
(e) Continued.

Figure A2.- Continued.



(e) Concluded.

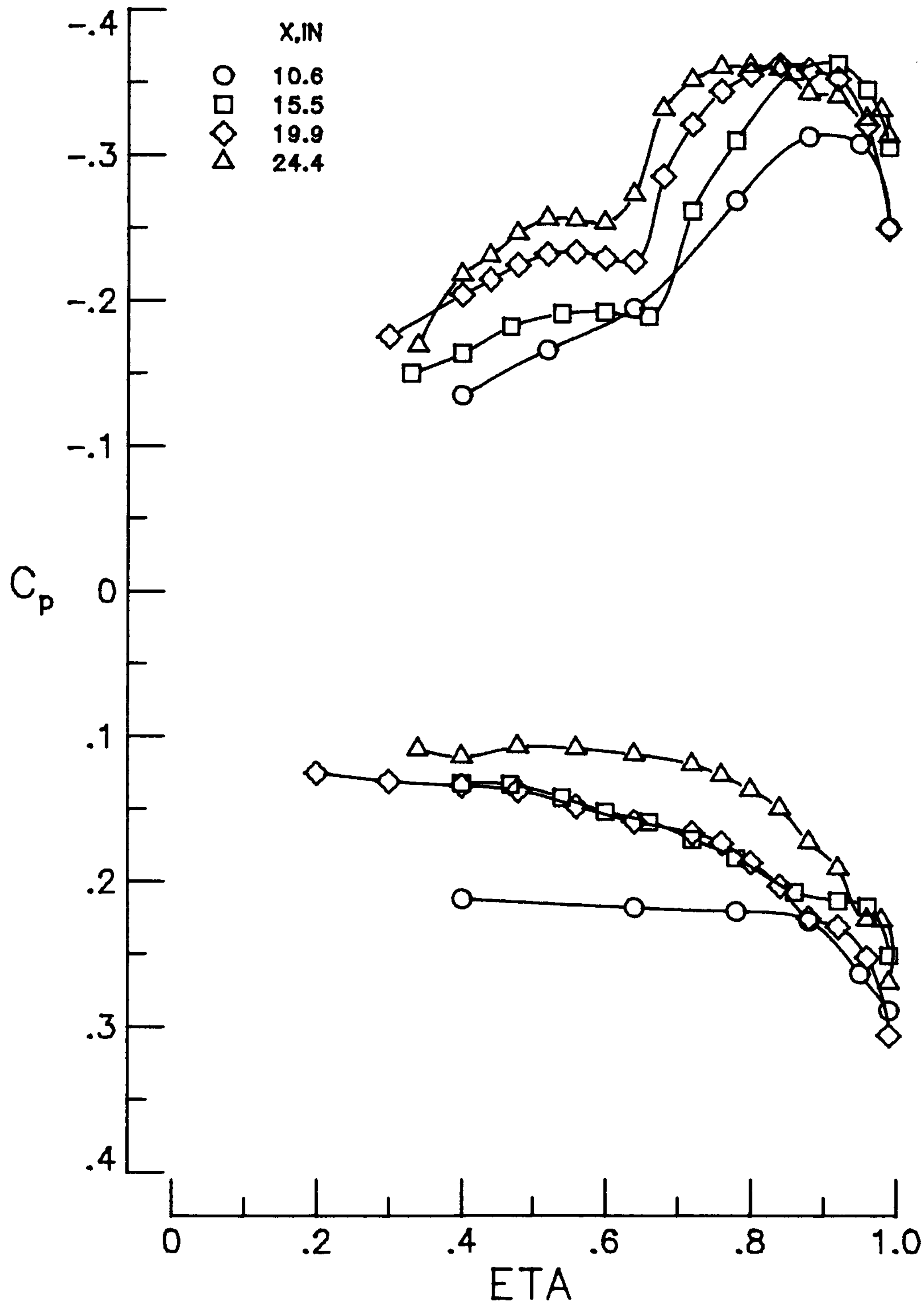
Figure A2.- Concluded.



(a) M = 1.58; ALPHA = 10°.

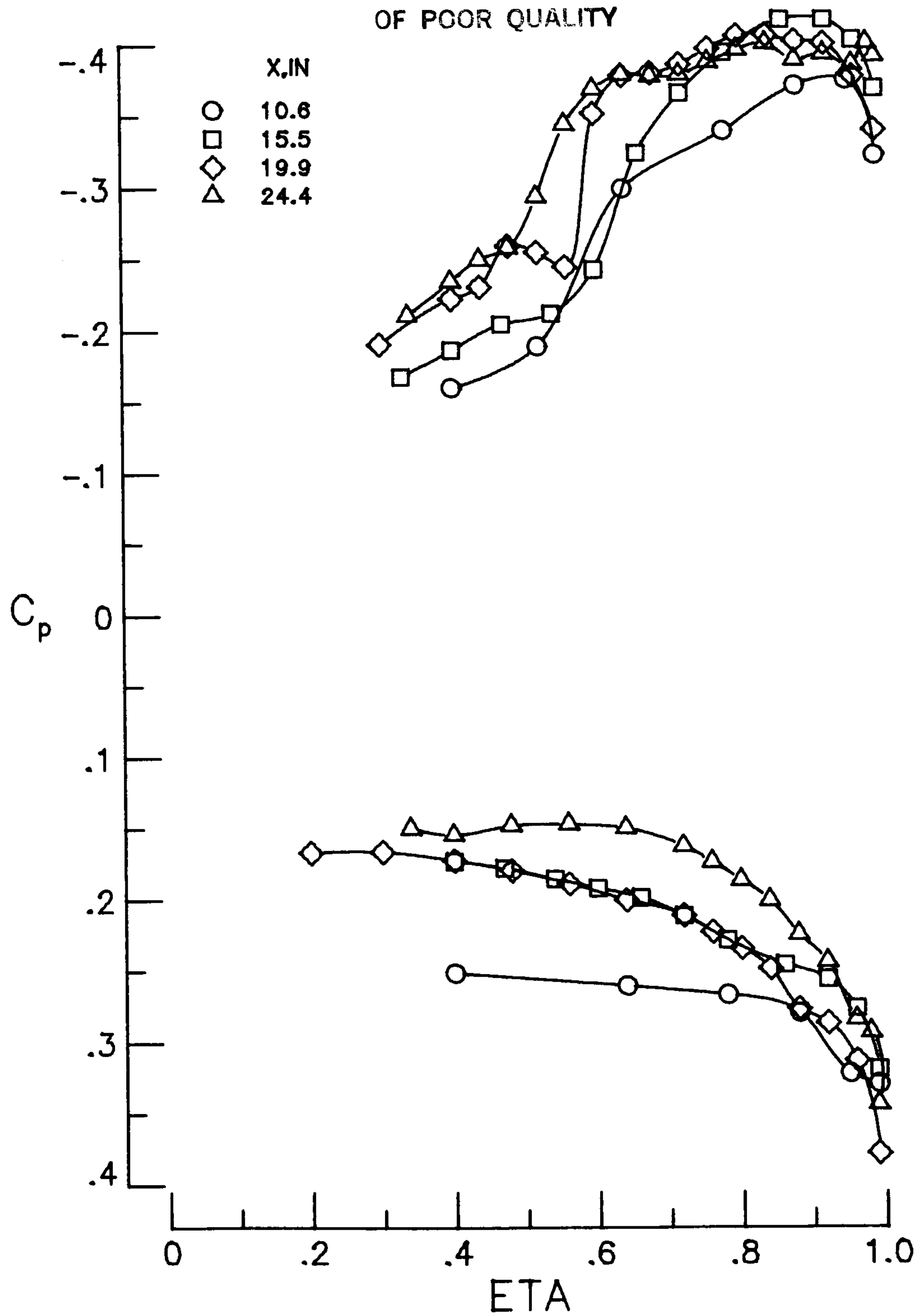
Figure A3.- Axial development of wing pressure-coefficient data at constant Mach number and angle of attack.

C-2



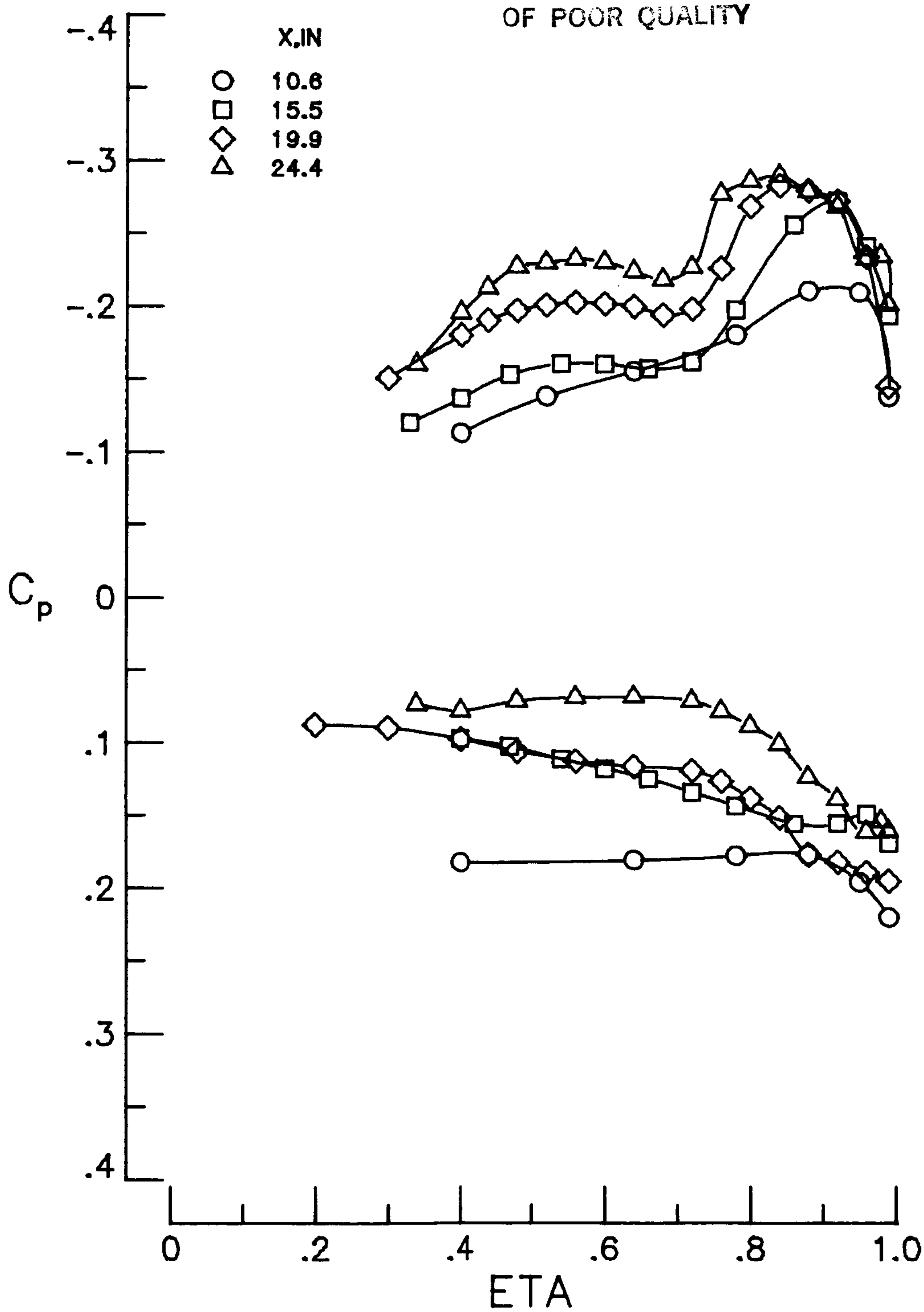
(b) M = 1.58; ALPHA = 12°.

Figure A3.- Continued.



(c) M = 1.58; ALPHA = 14°.

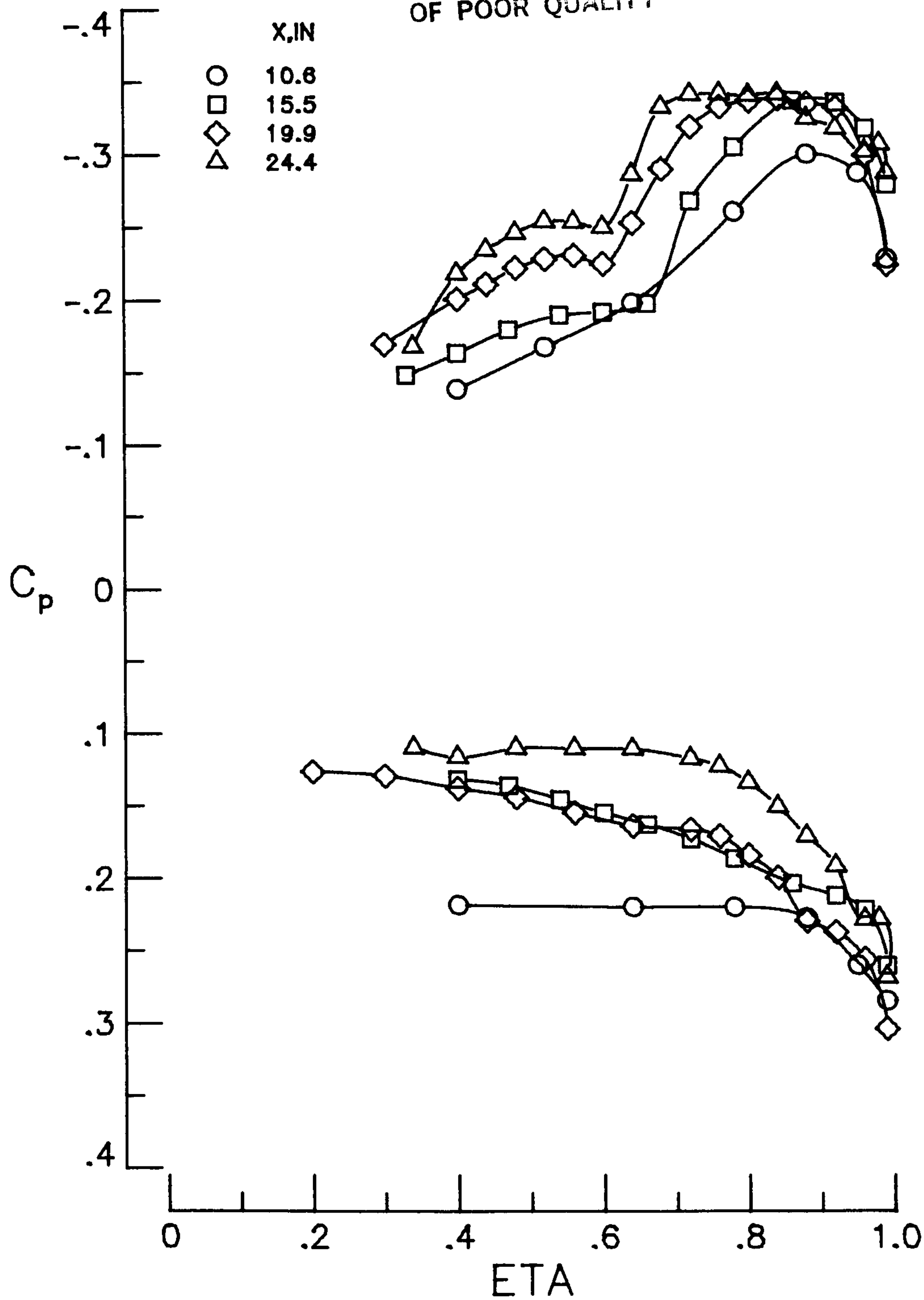
Figure A3.- Continued.



(d) M = 1.62; ALPHA = 10°.

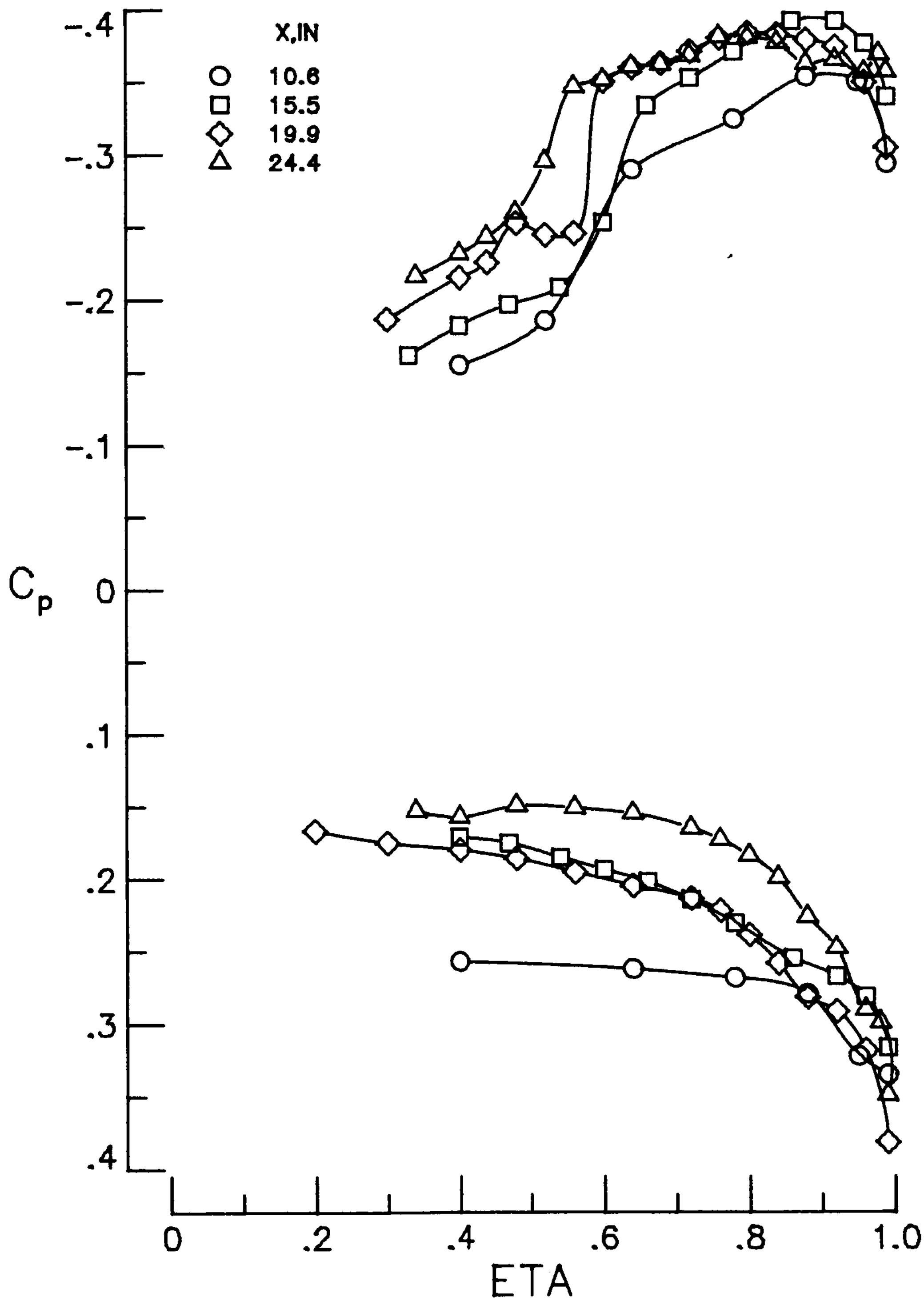
Figure A3.- Continued.

ORIGINAL PAGE IS
OF POOR QUALITY



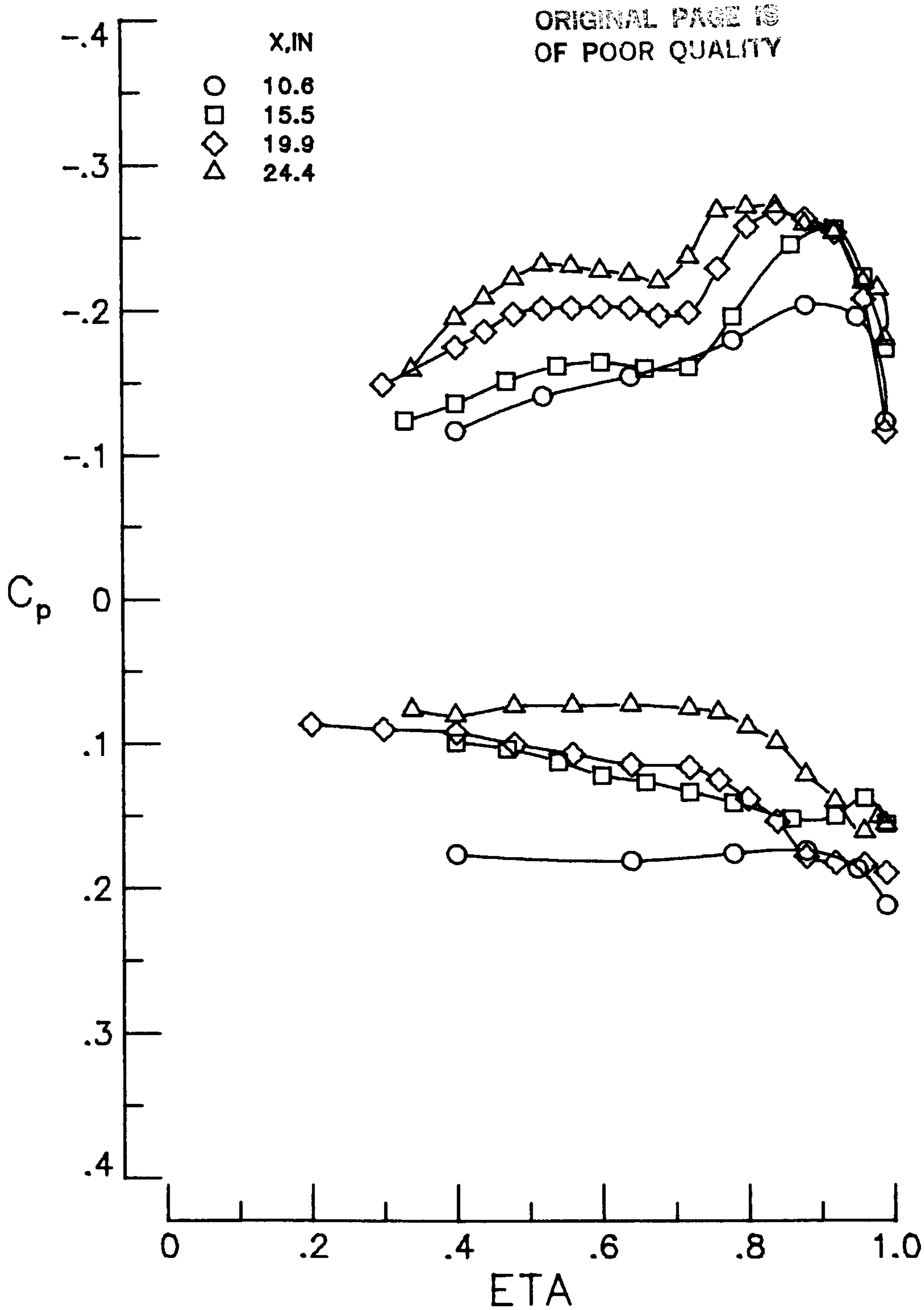
(e) M = 1.62; ALPHA = 12°.

Figure A3.- Continued.



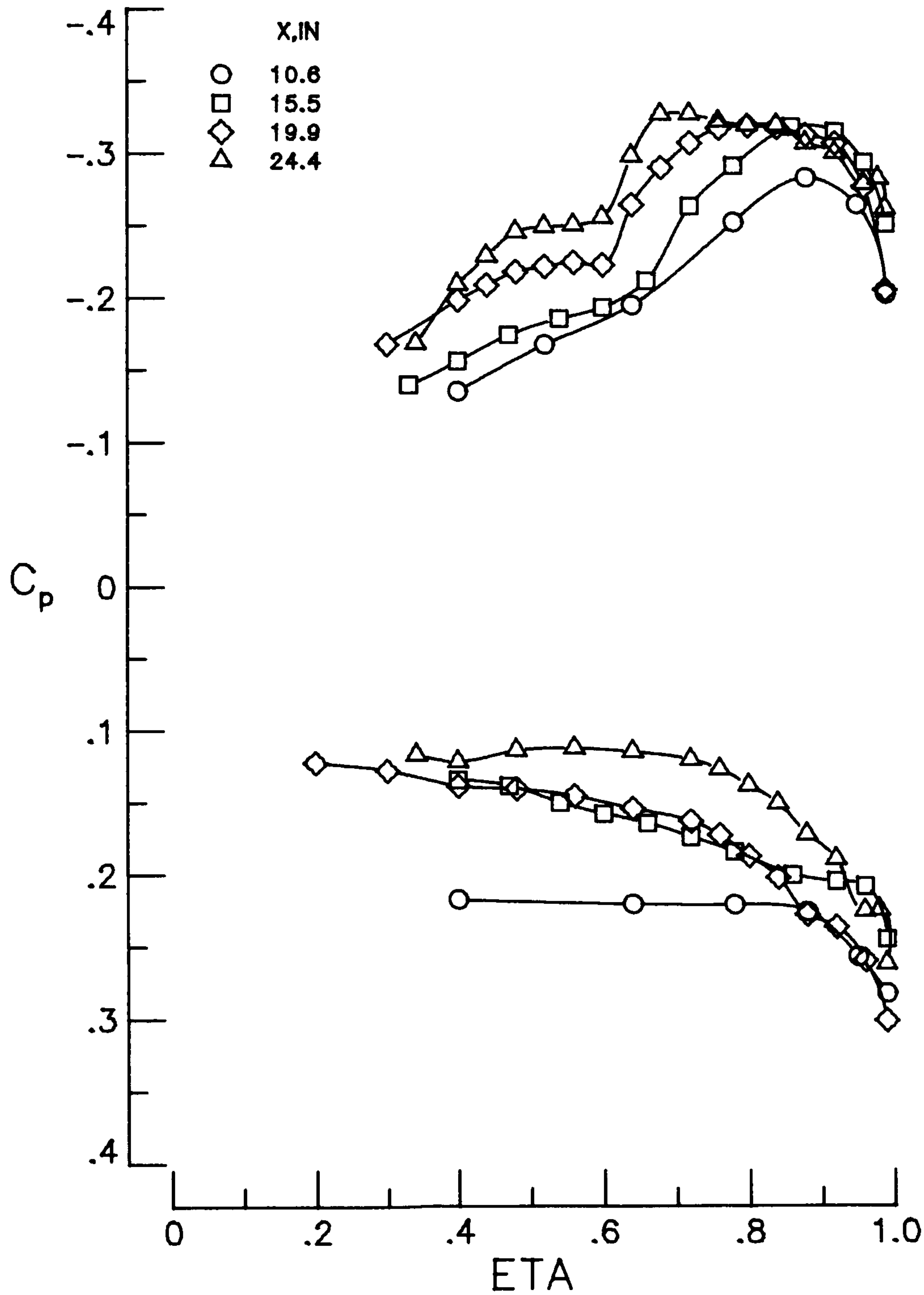
(f) M = 1.62; ALPHA = 14°.

Figure A3.- Continued.



(g) M = 1.66; ALPHA = 10°.

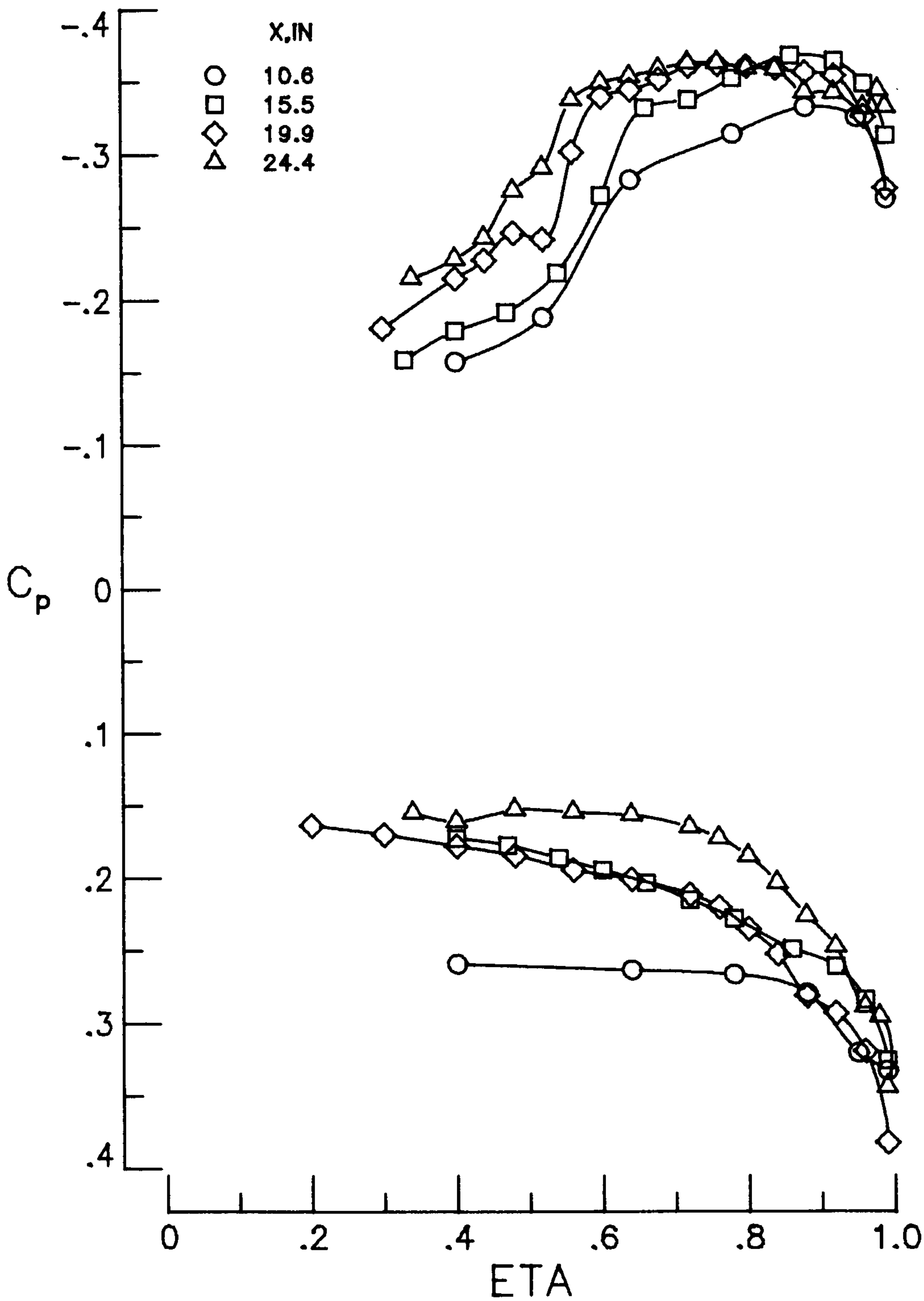
Figure A3.- Continued.



(h) M = 1.66; ALPHA = 12°.

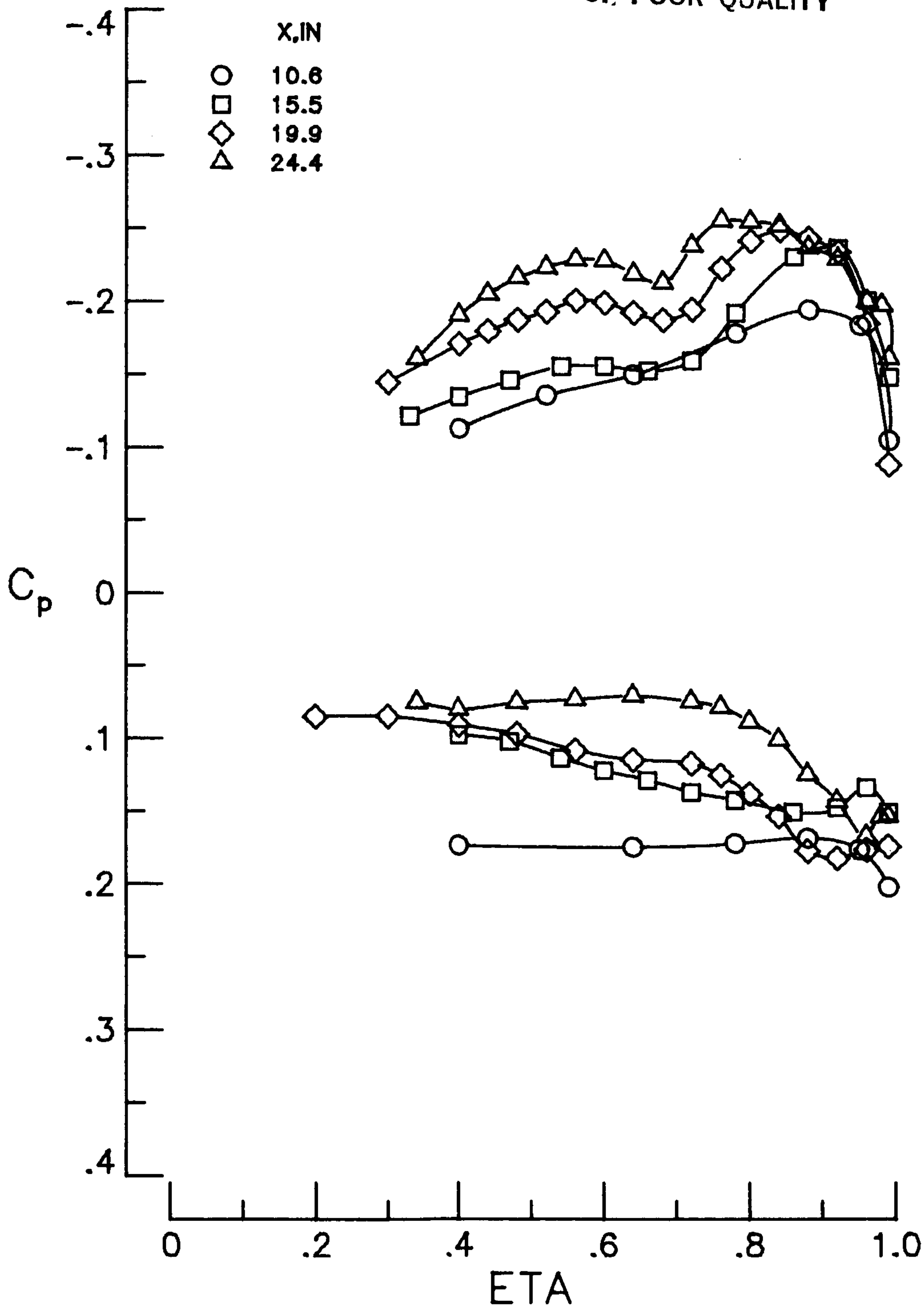
Figure A3.- Continued.

ORIGINAL PAGE IS
OF POOR QUALITY



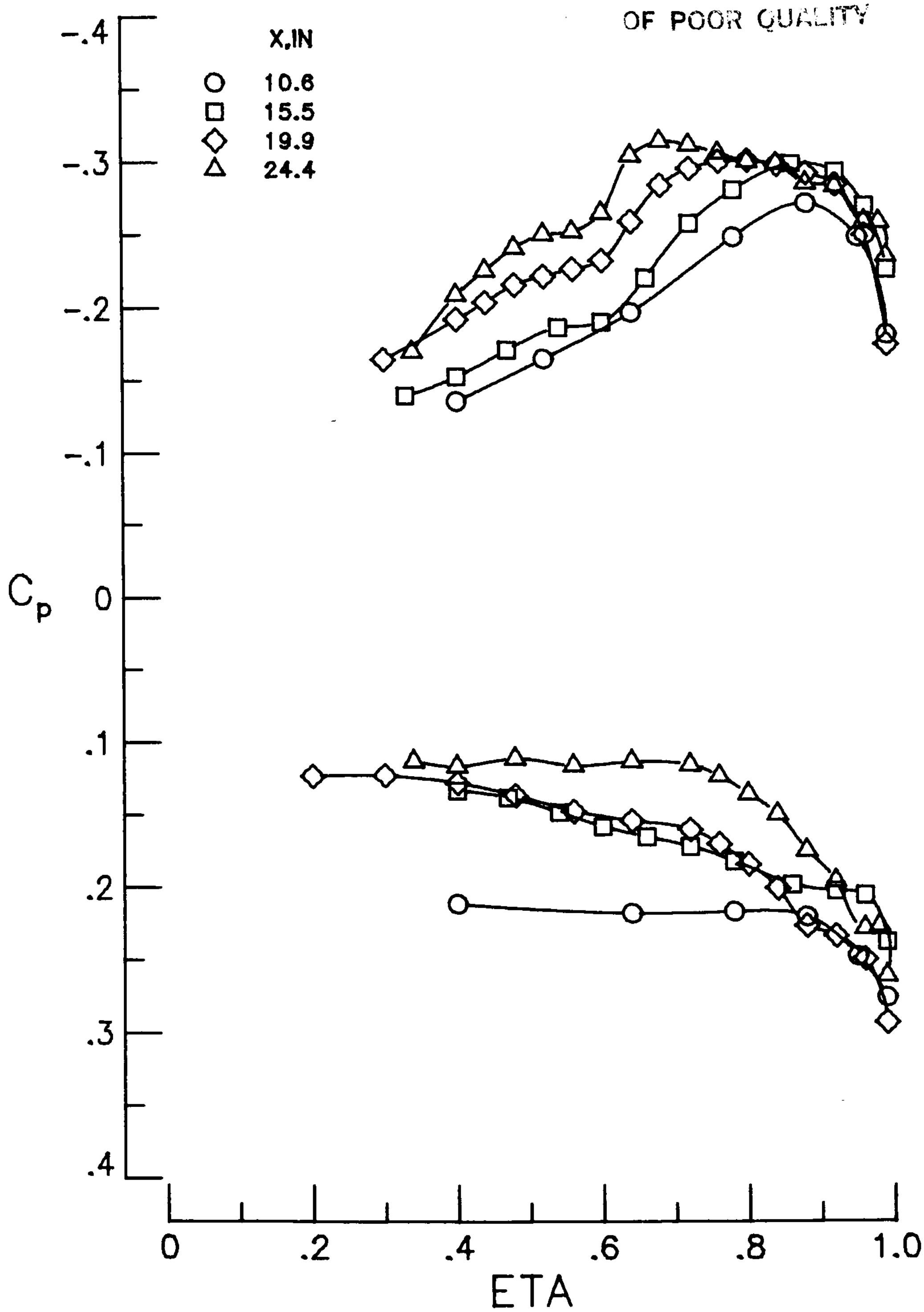
(i) M = 1.66; ALPHA = 14°.

Figure A3.- Continued.



(j) M = 1.70; ALPHA = 10°.

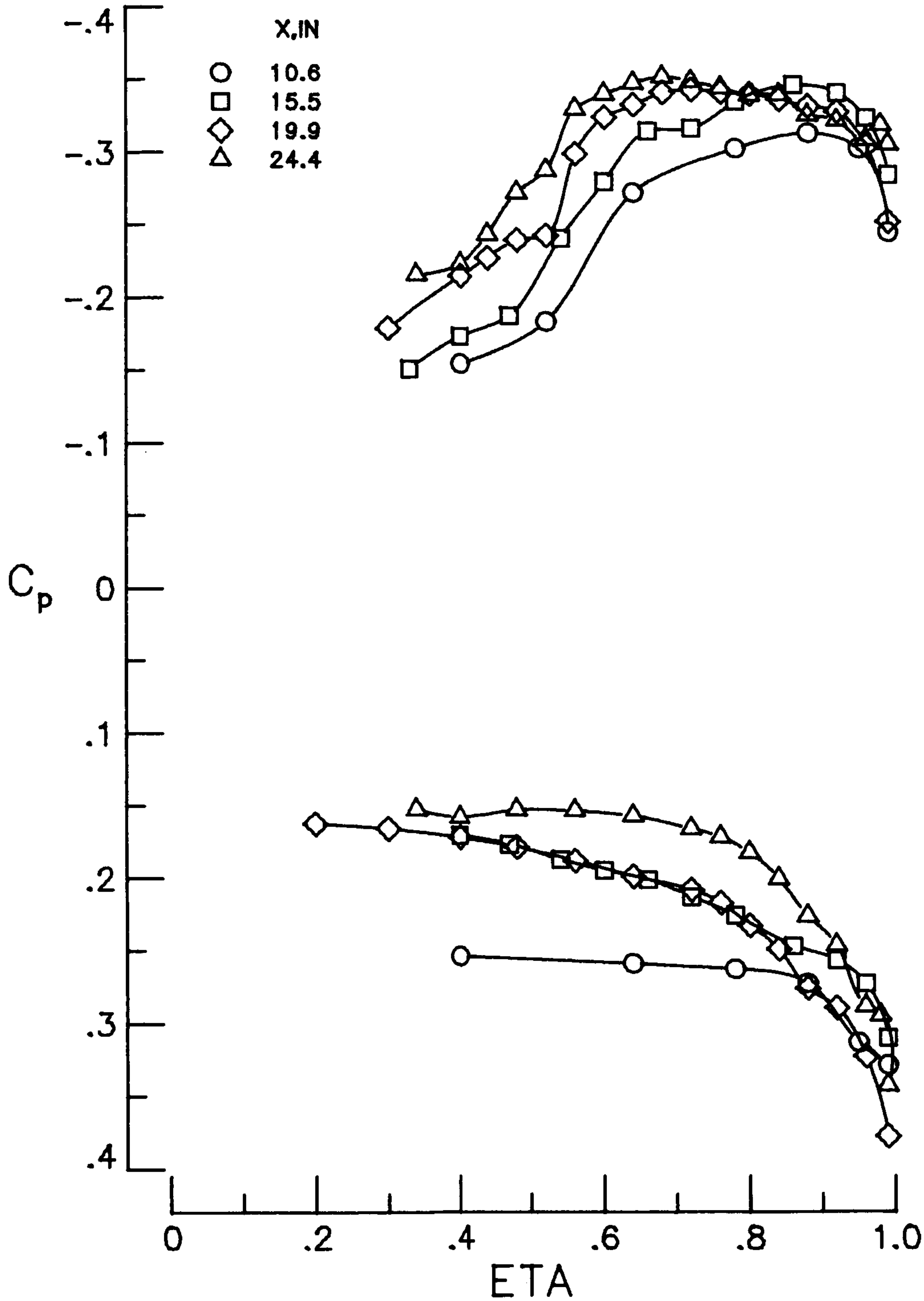
Figure A3.- Continued.



(k) M = 1.70; ALPHA = 12°.

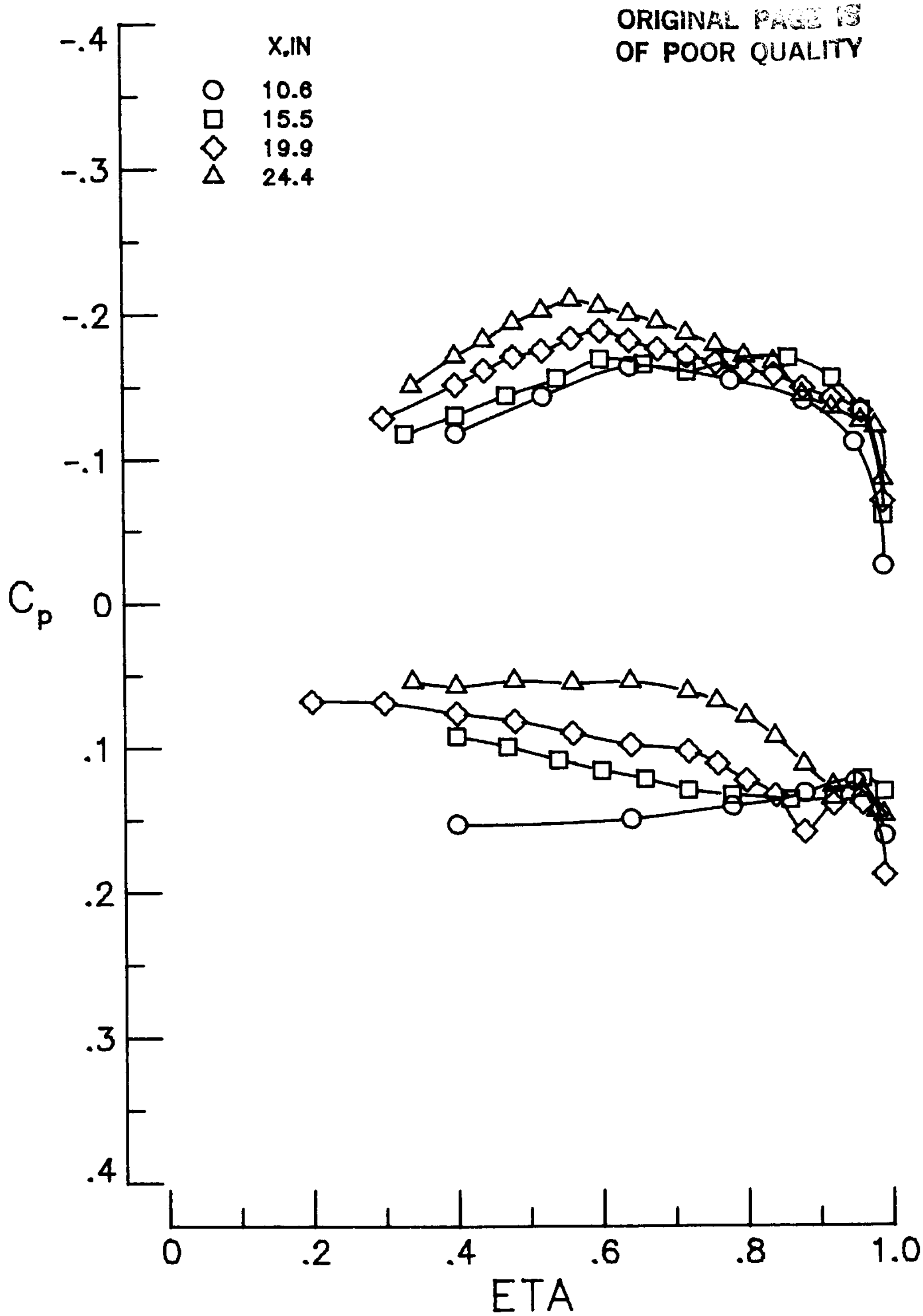
Figure A3.- Continued.

ORIGINAL PAGE IS
OF POOR QUALITY



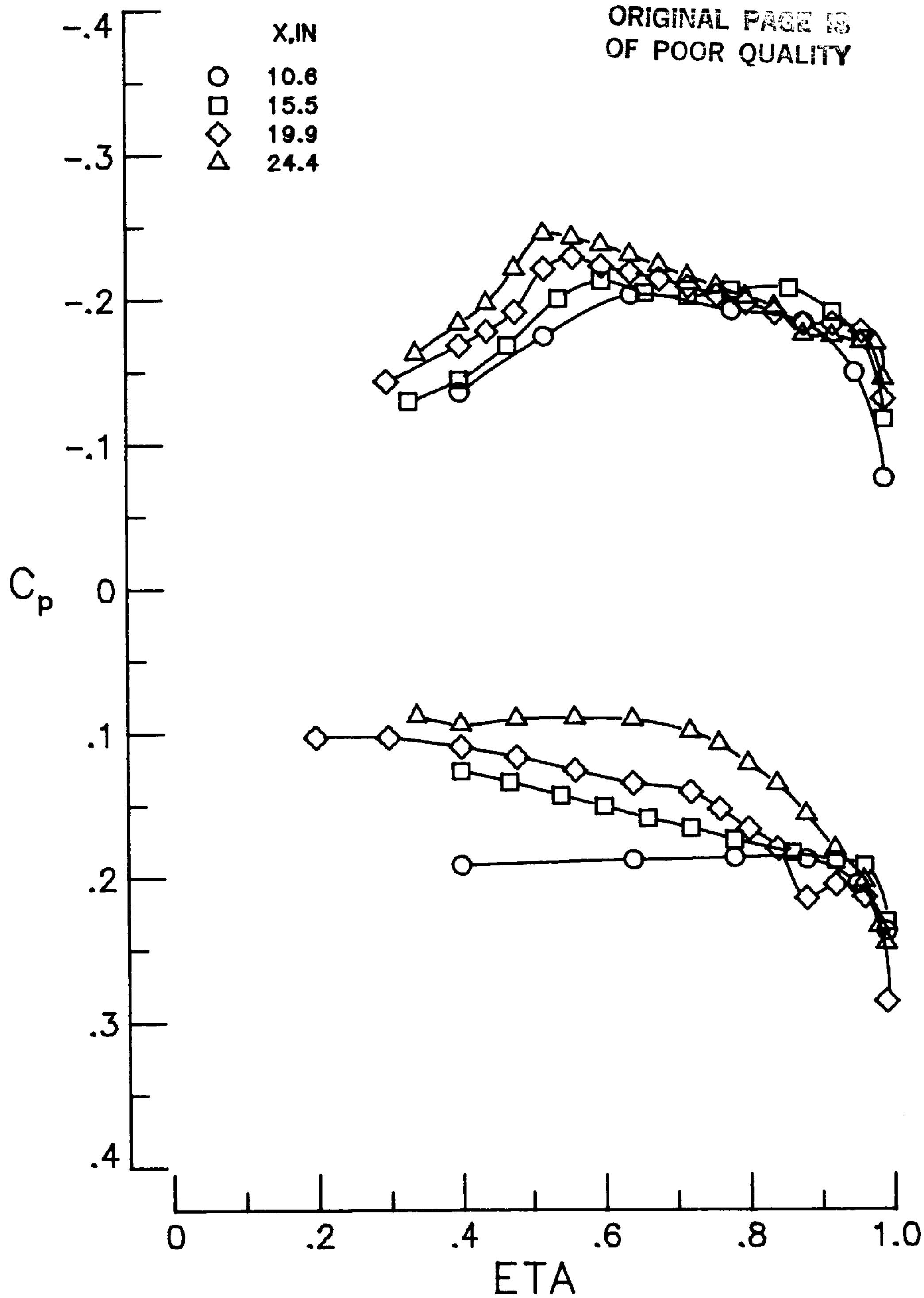
(l) M = 1.70; ALPHA = 14°.

Figure A3.- Continued.



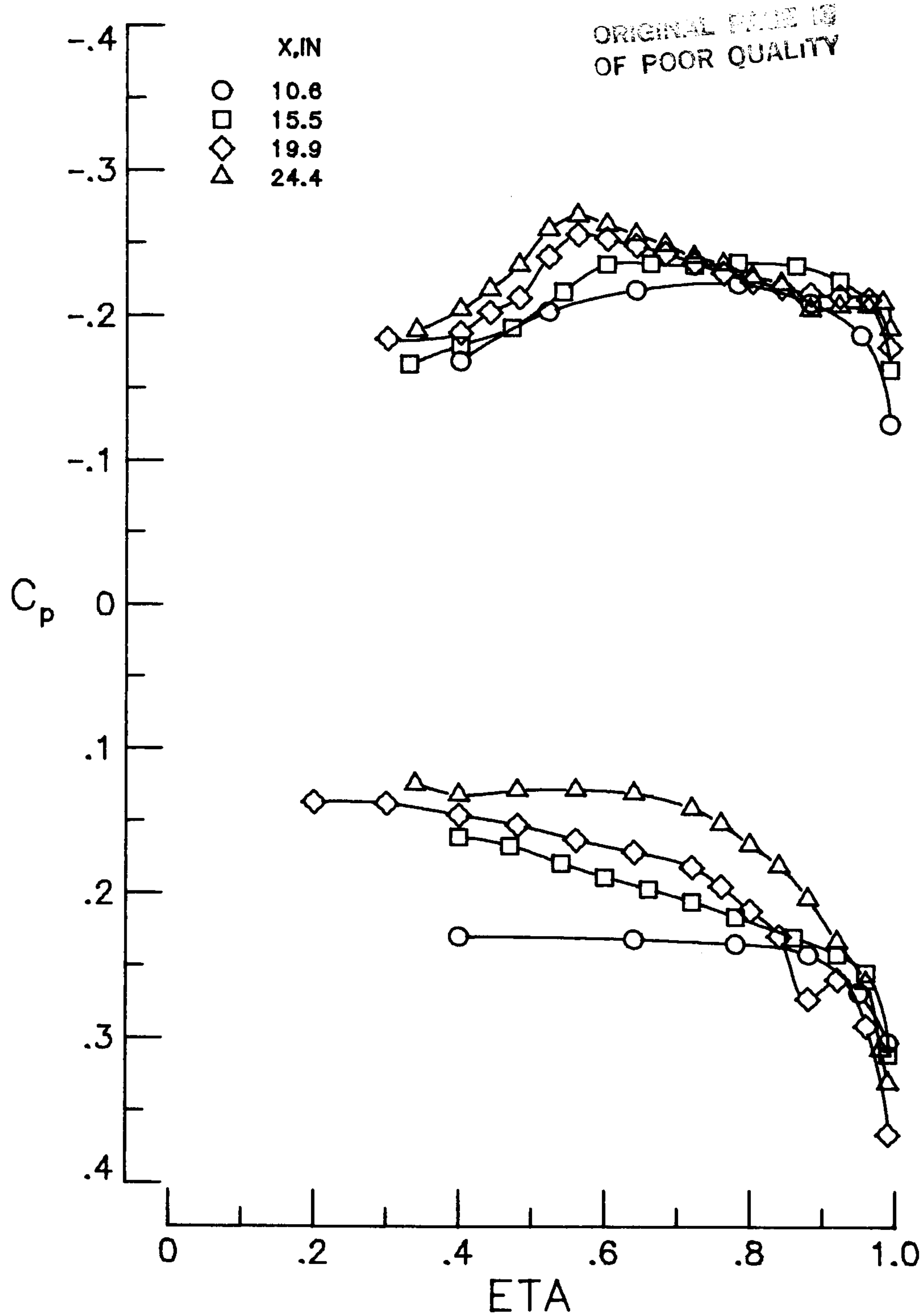
(m) M = 2.00; ALPHA = 10°.

Figure A3.- Continued.



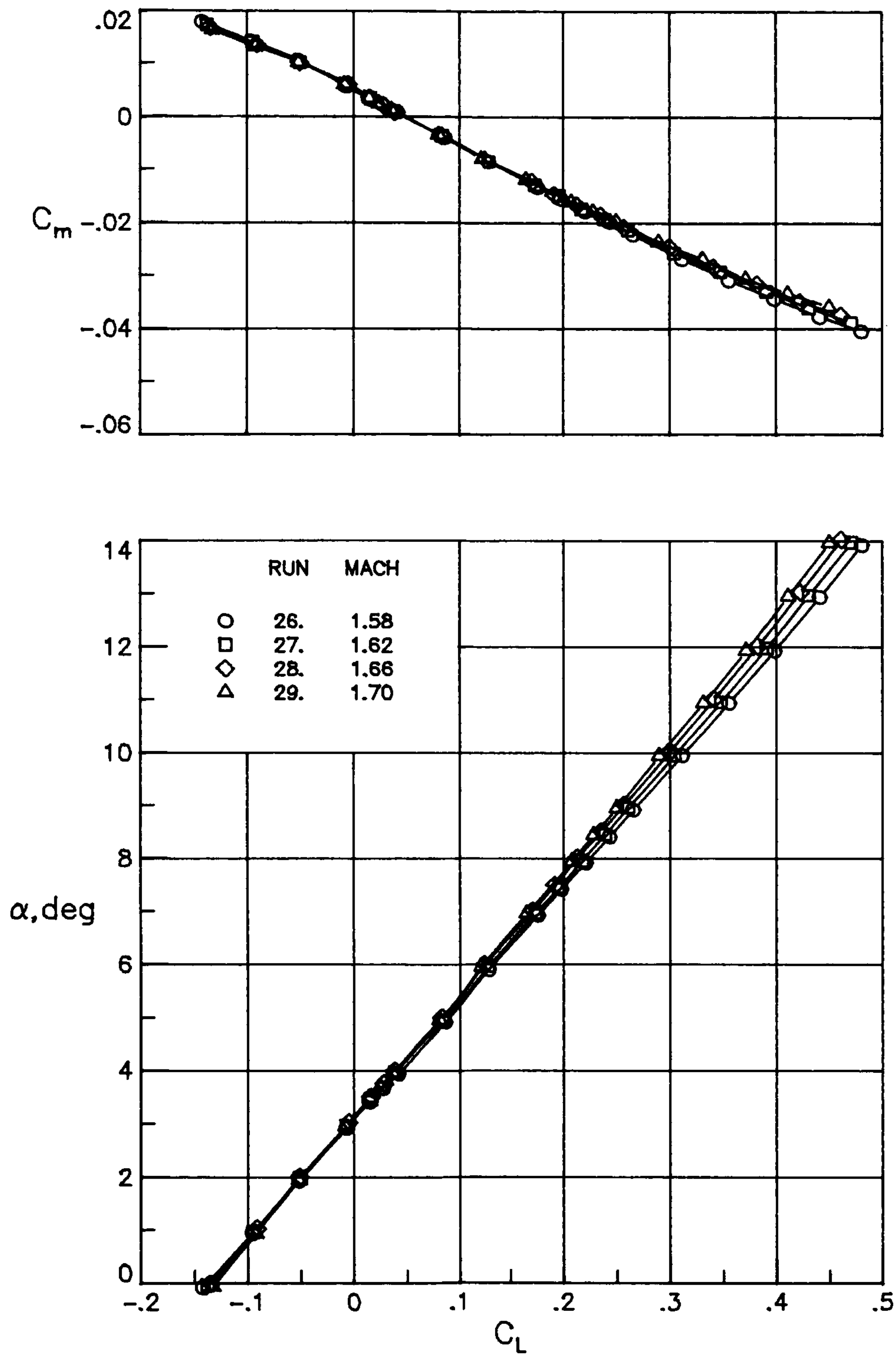
(n) M = 2.00; ALPHA = 12°.

Figure A3.- Continued.



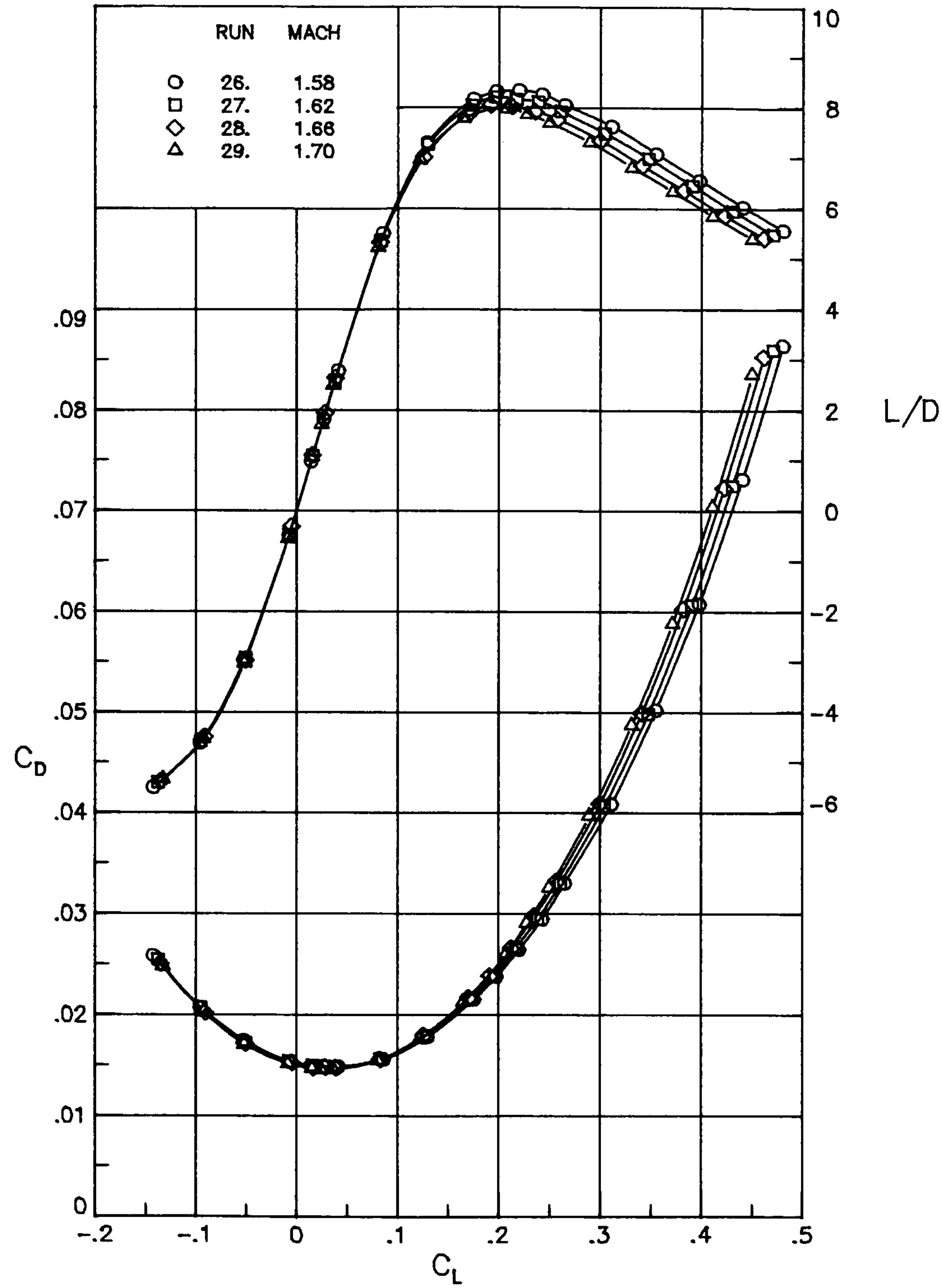
(o) M = 2.00; ALPHA = 14°.

Figure A3.- Concluded.



(a) C_L versus C_m and α.

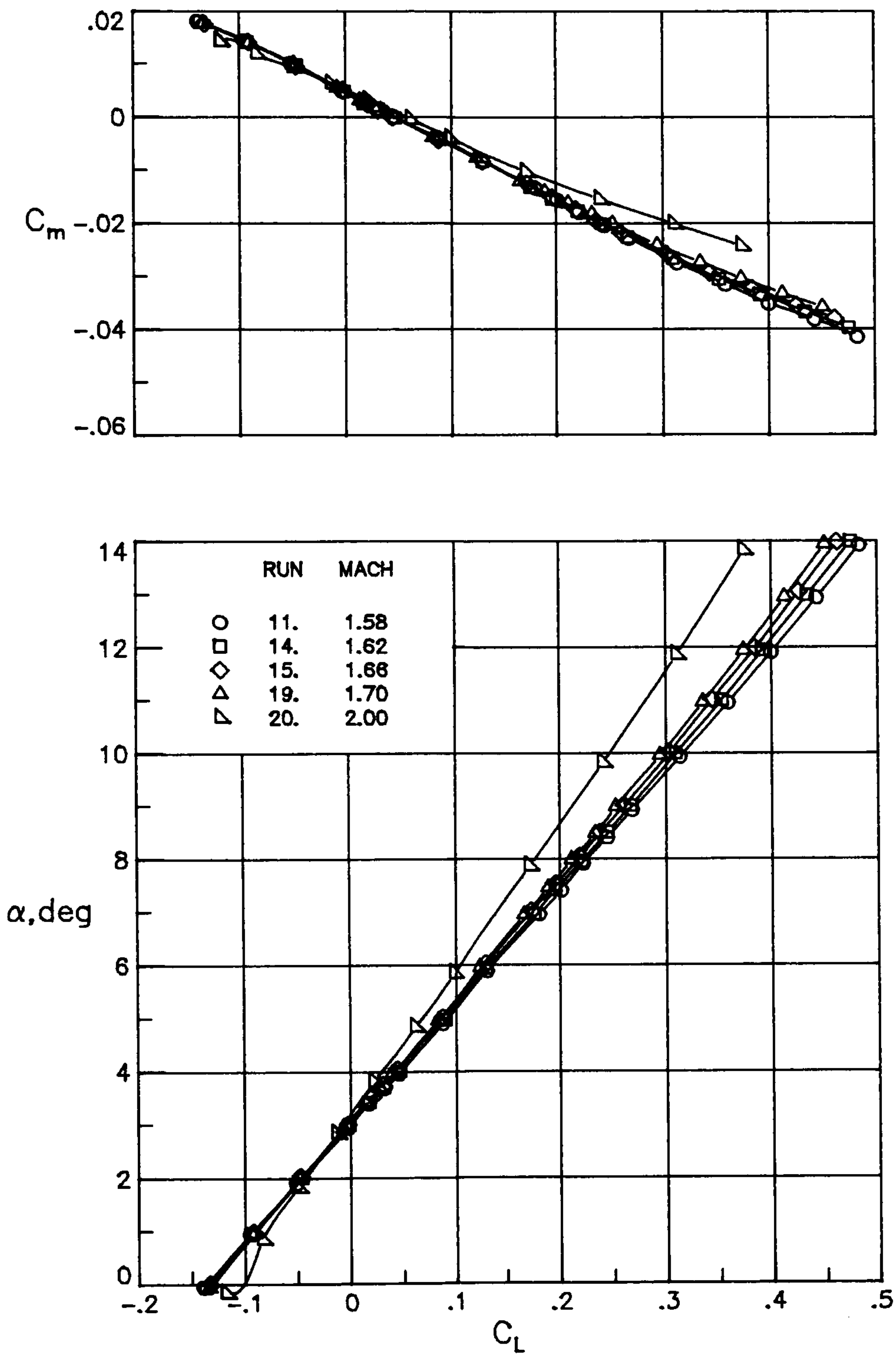
Figure A4.- Longitudinal force and moment data for wing with basic leading edge.



(b) C_L versus L/D and C_D.

Figure A4.- Concluded.

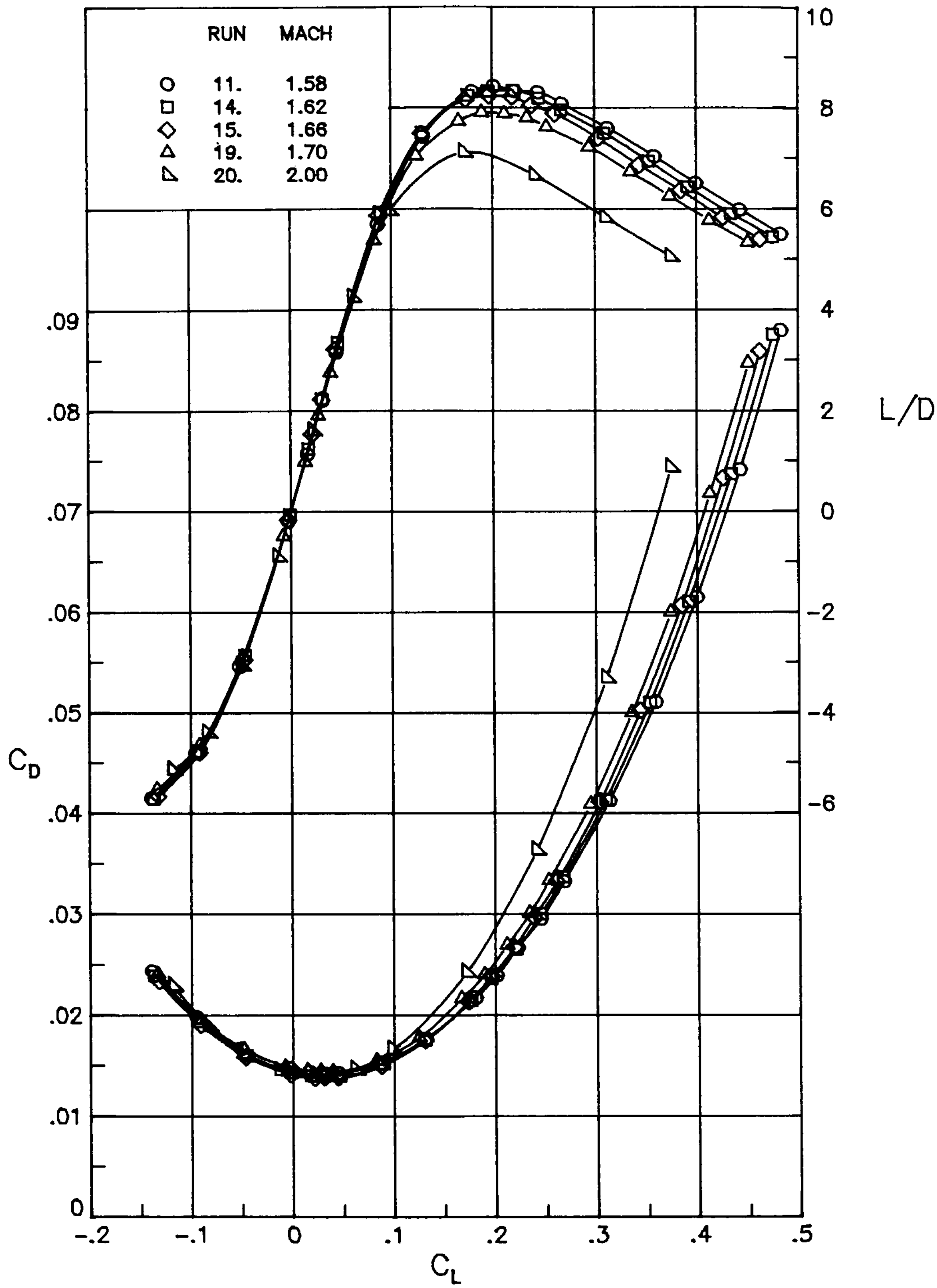
ORIGINAL PAGE IS
OF POOR QUALITY



(a) C_L versus C_m and α.

Figure A5.- Longitudinal force and moment data for wing with alternate leading edge.

ORIGINAL PAGE IS
OF POOR QUALITY



(b) C_L versus L/D and C_D.

Figure A5.- Concluded.

APPENDIX B

EXPERIMENTAL DATA TABULATION

The experimental RUN, POINT, and Mach numbers, and the angle-of-attack conditions are tabulated in table B1. Table B2 contains the pressure-coefficient data from the experimental program. The data are listed by POINT number, which indicates a unique Mach number and angle of attack for a configuration, that is, basic or alternate leading edge. The POINT numbers also appear on the C_p plots in appendix A and in the main text so that the reader can cross-reference the tabulated data with the plotted data. Table B3 contains the longitudinal force and moment data listed by RUN number, which indicates a variation of angle of attack at a constant Mach number for a configuration. The RUN numbers appear on the force and moment plots in appendix A and in the main text so that the reader can cross-reference plotted and tabulated results.

POINT 1124 is the corrected POINT 124. Analysis of the experimental data revealed that the wind-tunnel operating conditions unexpectedly surged by 3 percent while this data point was recorded. The wind-tunnel operating conditions did not vary by more than 0.1 percent for the other points in this run; therefore, POINT 124 was corrected to the average operating condition of the other points in this run. Both the original and corrected data for POINT 124 are tabulated, but only POINT 1124 is plotted.

APPENDIX B

TABLE B1.- EXPERIMENTAL RUN SCHEDULE

Basic leading edge

Run	Point	Mach	Alpha
1	16	1.58	5.95
	17		7.94
	18		9.89
	19		9.88
	20		10.88
	21		11.89
	22		12.89
	23		13.89
	24		5.91
2	25	1.62	5.98
	26		7.92
	27		8.98
	28		9.92
	29		10.95
	30		11.93
	31		12.91
	32		13.92
	33		5.98
3	34	1.66	6.02
	35		7.97
	36		9.02
	37		9.97
	38		10.97
	39		11.96
	40		12.95
	41		13.96
	42		6.01
4	43	1.70	5.93
	44		7.91
	45		8.90
	46		9.92
	47		10.90
	48		11.91
	49		12.92
	50		13.90
	51		5.93

Alternate leading edge

Run	Point	Mach	Alpha
5	81	1.58	5.93
	82		7.92
	83		8.91
	84		9.91
	85		10.91
	86		11.90
	87		12.91
	88		13.91
	90		5.91
	91		7.90
	92		8.93
6	93	1.62	5.97
	94		7.96
	95		8.97
	96		9.93
	97		10.95
	98		11.93
	99		12.95
	100		13.95
	101		5.98
	102		5.98
7	103	1.66	5.99
	104		7.99
	105		9.01
	106		9.99
	107		10.97
	108		11.98
	109		12.98
	110		13.98
	111		5.99
8	119	1.70	5.92
	120		7.94
	121		8.97
	122		9.96
	123		10.94
	[a]124		11.94
	125		12.91
	126		13.91
	127		5.91
9	128	2.00	5.80
	129		7.81
	130		9.82
	131		11.80
	132		13.81
	133		5.80

[a]Reference values adjusted, see preceding page.

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE B2.- SUPERSONIC MANEUVER WING PRESSURE DATA

MACH = 1.58   ALPHA = 5.95   POINT = 16

PO = 1072.62 PSF   P = 259.93 PSF   Q = 454.22 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0676	.1039
	2.570	.52	-.0778	
	3.163	.64	-.0823	.1007
	3.855	.78	-.0696	.0909
	4.350	.88	-.0680	.0744
	4.696	.95	-.0374	.0256
	4.893	.99	.0484	.0022
15.5	2.484	.33	-.0739	
	3.011	.40	-.0852	.0304
	3.538	.47	-.0952	.0352
	4.065	.54	-.0952	.0445
	4.517	.60	-.0891	.0491
	4.968	.66	-.0776	.0539
	5.420	.72	-.0666	.0580
	5.872	.78	-.0712	.0599
	6.474	.86	-.0756	.0563
	6.926	.92	-.0722	.0297
	7.227	.96	-.0482	-.0414
	7.453	.99	.0146	-.1000
19.9	2.077	.20		.0189
	3.116	.30	-.1121	.0212
	4.154	.40	-.1343	.0276
	4.570	.44	-.1406	
	4.985	.48	-.1442	.0321
	5.401	.52	-.1407	
	5.816	.56	-.1402	.0325
	6.232	.60	-.1379	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1309	.0333
	7.062	.68	-.1230	
	7.478	.72	-.1121	.0243
	7.893	.76	-.0996	.0303
	8.309	.80	-.0901	.0414
	8.724	.84	-.0976	.0531
	9.140	.88	-.1045	.0760
	9.555	.92	-.1213	.0655
	9.970	.96	-.0780	-.0688
	10.282	.99	.0444	-.1185
24.4	4.575	.34	-.1359	-.0004
	5.323	.40	-.1508	.0035
	5.855	.44	-.1624	
	6.388	.48	-.1738	-.0041
	6.920	.52	-.1753	
	7.453	.56	-.1726	-.0065
	7.985	.60	-.1687	
	8.517	.64	-.1632	-.0116
	9.049	.68	-.1551	
	9.582	.72	-.1450	-.0165
	10.114	.76	-.1318	-.0150
	10.646	.80	-.1236	-.0109
	10.179	.84	-.1184	-.0022
	11.711	.88	-.1210	.0189
	12.243	.92	-.1347	.0396
	12.776	.96	-.0985	-.0868
	13.042	.98	-.0846	-.1080
	13.175	.99	-.0196	-.1238

TABLE B2.- Continued

MACH = 1.58 ALPHA = 7.94 POINT = 17

PO = 1072.36 PSF P = 259.87 PSF Q = 454.11 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0925	.1401
	2.570	.52	-.1098	
	3.163	.64	-.1233	.1379
	3.855	.78	-.1256	.1308
	4.350	.88	-.1397	.1248
	4.696	.95	-.1284	.1196
	4.893	.99	-.0552	.1287
15.5	2.484	.33	-.1030	
	3.011	.40	-.1172	.0618
	3.538	.47	-.1282	.0653
	4.065	.54	-.1319	.0726
	4.517	.60	-.1280	.0797
	4.968	.66	-.1208	.0869
	5.420	.72	-.1174	.0944
	5.872	.78	-.1264	.1008
	6.474	.86	-.1545	.1056
	6.926	.92	-.1817	.0962
	7.227	.96	-.1741	.0642
	7.453	.99	-.0961	.0622
19.9	2.077	.20		.0493
	3.116	.30	-.1354	.0524
	4.154	.40	-.1638	.0610
	4.570	.44	-.1702	
	4.985	.48	-.1760	.0643
	5.401	.52	-.1767	
	5.816	.56	-.1772	.0702
	6.232	.60	-.1757	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1708	.0749
	7.062	.68	-.1641	
	7.478	.72	-.1557	.0753
	7.893	.76	-.1502	.0785
	8.309	.80	-.1504	.0874
	8.724	.84	-.1913	.0985
	9.140	.88	-.2131	.1198
	9.555	.92	-.2243	.1221
	9.970	.96	-.1925	.0956
	10.282	.99	-.0665	.0370
24.4	4.575	.34	-.1550	.0314
	5.323	.40	-.1781	.0368
	5.855	.44	-.1935	
	6.388	.48	-.2052	.0295
	6.920	.52	-.2049	
	7.453	.56	-.2068	.0287
	7.985	.60	-.2035	
	8.517	.64	-.1994	.0277
	9.049	.68	-.1913	
	9.582	.72	-.1816	.0278
	10.114	.76	-.1717	.0312
	10.646	.80	-.1761	.0386
	10.179	.84	-.2117	.0484
	11.711	.88	-.2310	.0691
	12.243	.92	-.2265	.0814
	12.776	.96	-.1880	.0909
	13.042	.98	-.1845	.0581
	13.175	.99	-.1261	.0245

TABLE B2.- Continued

MACH = 1.58 ALPHA = 9.89 POINT = 18

PO = 1072.42 PSF P = 259.88 PSF Q = 454.14 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1151	.1741
	2.570	.52	-.1400	
	3.163	.64	-.1576	.1757
	3.855	.78	-.1884	.1742
	4.350	.88	-.2224	.1753
	4.696	.95	-.2307	.1953
	4.893	.99	-.1645	.2211
15.5	2.484	.33	-.1291	
	3.011	.40	-.1435	.0941
	3.538	.47	-.1571	.0955
	4.065	.54	-.1627	.1050
	4.517	.60	-.1638	.1144
	4.968	.66	-.1597	.1215
	5.420	.72	-.1622	.1322
	5.872	.78	-.1935	.1407
	6.474	.86	-.2678	.1516
	6.926	.92	-.2916	.1554
	7.227	.96	-.2655	.1549
	7.453	.99	-.2248	.1736
19.9	2.077	.20		.0854
	3.116	.30	-.1558	.0894
	4.154	.40	-.1849	.0949
	4.570	.44	-.1944	
	4.985	.48	-.2038	.0985
	5.401	.52	-.2074	
	5.816	.56	-.2084	.1073
	6.232	.60	-.2084	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.2052	.1149
	7.062	.68	-.1986	
	7.478	.72	-.1998	.1195
	7.893	.76	-.2119	.1253
	8.309	.80	-.2780	.1364
	8.724	.84	-.3041	.1491
	9.140	.88	-.3046	.1734
	9.555	.92	-.3009	.1757
	9.970	.96	-.2596	.1807
	10.282	.99	-.1641	.1920
24.4	4.575	.34	-.1583	.0679
	5.323	.40	-.2032	.0723
	5.855	.44	-.2181	
	6.388	.48	-.2277	.0653
	6.920	.52	-.2332	
	7.453	.56	-.2376	.0679
	7.985	.60	-.2347	
	8.517	.64	-.2288	.0665
	9.049	.68	-.2208	
	9.582	.72	-.2184	.0719
	10.114	.76	-.2722	.0769
	10.646	.80	-.3054	.0872
	10.179	.84	-.3114	.1005
	11.711	.88	-.2984	.1202
	12.243	.92	-.2858	.1340
	12.776	.96	-.2578	.1596
	13.042	.98	-.2603	.1519
	13.175	.99	-.2262	.1649

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE B2.- Continued

MACH = 1.58   ALPHA = 9.88   POINT = 19

PO = 1072.42 PSF   P = 259.88 PSF   Q = 454.14 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1163	.1717
	2.570	.52	-.1395	
	3.163	.64	-.1566	.1737
	3.855	.78	-.1859	.1758
	4.350	.88	-.2204	.1784
	4.696	.95	-.2294	.1999
	4.893	.99	-.1587	.2243
15.5	2.484	.33	-.1288	
	3.011	.40	-.1422	.0944
	3.538	.47	-.1556	.0972
	4.065	.54	-.1610	.1074
	4.517	.60	-.1623	.1168
	4.968	.66	-.1583	.1245
	5.420	.72	-.1616	.1330
	5.872	.78	-.1950	.1416
	6.474	.86	-.2666	.1512
	6.926	.92	-.2905	.1519
	7.227	.96	-.2643	.1506
	7.453	.99	-.2235	.1688
19.9	2.077	.20		.0868
	3.116	.30	-.1546	.0918
	4.154	.40	-.1840	.0979
	4.570	.44	-.1936	
	4.985	.48	-.2033	.1014
	5.401	.52	-.2076	
	5.816	.56	-.2087	.1080
	6.232	.60	-.2091	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.2062	.1133
	7.062	.68	-.1998	
	7.478	.72	-.2001	.1154
	7.893	.76	-.2117	.1221
	8.309	.80	-.2764	.1340
	8.724	.84	-.3033	.1499
	9.140	.88	-.3039	.1750
	9.555	.92	-.3006	.1784
	9.970	.96	-.2593	.1836
	10.282	.99	-.1638	.1946
24.4	4.575	.34	-.1569	.0692
	5.323	.40	-.2021	.0750
	5.855	.44	-.2171	
	6.388	.48	-.2270	.0676
	6.920	.52	-.2328	
	7.453	.56	-.2379	.0691
	7.985	.60	-.2349	
	8.517	.64	-.2295	.0665
	9.049	.68	-.2219	
	9.582	.72	-.2194	.0681
	10.114	.76	-.2703	.0726
	10.646	.80	-.3049	.0842
	10.179	.84	-.3114	.0980
	11.711	.88	-.2979	.1210
	12.243	.92	-.2854	.1365
	12.776	.96	-.2573	.1623
	13.042	.98	-.2603	.1547
	13.175	.99	-.2274	.1669

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE B2.- Continued

MACH = 1.58 ALPHA =10.88 POINT = 20

PO = 1072.44 PSF P = 259.89 PSF Q = 454.15 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1278	.1905
	2.570	.52	-.1540	
	3.163	.64	-.1756	.1938
	3.855	.78	-.2259	.1987
	4.350	.88	-.2656	.2048
	4.696	.95	-.2803	.2297
	4.893	.99	-.2121	.2602
15.5	2.484	.33	-.1410	
	3.011	.40	-.1543	.1119
	3.538	.47	-.1705	.1141
	4.065	.54	-.1779	.1246
	4.517	.60	-.1788	.1339
	4.968	.66	-.1766	.1425
	5.420	.72	-.1828	.1525
	5.872	.78	-.2493	.1625
	6.474	.86	-.3217	.1778
	6.926	.92	-.3304	.1832
	7.227	.96	-.3117	.1863
	7.453	.99	-.2722	.2104
19.9	2.077	.20		.1059
	3.116	.30	-.1669	.1122
	4.154	.40	-.1945	.1148
	4.570	.44	-.2059	
	4.985	.48	-.2159	.1204
	5.401	.52	-.2213	
	5.816	.56	-.2240	.1275
	6.232	.60	-.2235	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.2172	.1352
	7.062	.68	-.2233	
	7.478	.72	-.2430	.1396
	7.893	.76	-.3046	.1467
	8.309	.80	-.3244	.1588
	8.724	.84	-.3357	.1752
	9.140	.88	-.3349	.2027
	9.555	.92	-.3299	.2054
	9.970	.96	-.2919	.2190
	10.282	.99	-.2096	.2543
24.4	4.575	.34	-.1579	.0883
	5.323	.40	-.2123	.0932
	5.855	.44	-.2249	
	6.388	.48	-.2390	.0850
	6.920	.52	-.2453	
	7.453	.56	-.2489	.0884
	7.985	.60	-.2476	
	8.517	.64	-.2445	.0880
	9.049	.68	-.2454	
	9.582	.72	-.3068	.0903
	10.114	.76	-.3288	.0957
	10.646	.80	-.3391	.1090
	10.179	.84	-.3385	.1224
	11.711	.88	-.3209	.1430
	12.243	.92	-.3148	.1638
	12.776	.96	-.2951	.1953
	13.042	.98	-.2985	.1920
	13.175	.99	-.2728	.2217

TABLE B2.- Continued

MACH = 1.58 ALPHA =11.89 POINT = 21

PO = 1072.64 PSF P = 259.94 PSF Q = 454.23 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1360	.2115
	2.570	.52	-.1673	
	3.163	.64	-.1964	.2174
	3.855	.78	-.2708	.2199
	4.350	.88	-.3149	.2265
	4.696	.95	-.3103	.2629
	4.893	.99	-.2526	.2882
15.5	2.484	.33	-.1508	
	3.011	.40	-.1647	.1318
	3.538	.47	-.1835	.1327
	4.065	.54	-.1925	.1416
	4.517	.60	-.1937	.1514
	4.968	.66	-.1910	.1582
	5.420	.72	-.2638	.1702
	5.872	.78	-.3123	.1831
	6.474	.86	-.3599	.2066
	6.926	.92	-.3653	.2123
	7.227	.96	-.3475	.2163
	7.453	.99	-.3080	.2502
19.9	2.077	.20		.1249
	3.116	.30	-.1758	.1307
	4.154	.40	-.2050	.1336
	4.570	.44	-.2159	
	4.985	.48	-.2261	.1368
	5.401	.52	-.2335	
	5.816	.56	-.2353	.1475
	6.232	.60	-.2308	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.2287	.1582
	7.062	.68	-.2874	
	7.478	.72	-.3234	.1659
	7.893	.76	-.3463	.1727
	8.309	.80	-.3577	.1861
	8.724	.84	-.3645	.2024
	9.140	.88	-.3612	.2245
	9.555	.92	-.3551	.2303
	9.970	.96	-.3230	.2516
	10.282	.99	-.2520	.3053
24.4	4.575	.34	-.1698	.1081
	5.323	.40	-.2191	.1135
	5.855	.44	-.2325	
	6.388	.48	-.2479	.1062
	6.920	.52	-.2582	
	7.453	.56	-.2575	.1073
	7.985	.60	-.2553	
	8.517	.64	-.2750	.1114
	9.049	.68	-.3341	
	9.582	.72	-.3542	.1184
	10.114	.76	-.3632	.1259
	10.646	.80	-.3637	.1362
	10.179	.84	-.3616	.1490
	11.711	.88	-.3450	.1722
	12.243	.92	-.3429	.1901
	12.776	.96	-.3275	.2255
	13.042	.98	-.3340	.2257
	13.175	.99	-.3157	.2688

TABLE B2.- Continued

MACH = 1.58 ALPHA =12.89 POINT = 22

PO = 1072.72 PSF P = 259.95 PSF Q = 454.26 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1478	.2316
	2.570	.52	-.1787	
	3.163	.64	-.2231	.2391
	3.855	.78	-.3186	.2441
	4.350	.88	-.3500	.2537
	4.696	.95	-.3430	.2941
	4.893	.99	-.2880	.3121
15.5	2.484	.33	-.1600	
	3.011	.40	-.1765	.1535
	3.538	.47	-.1955	.1551
	4.065	.54	-.2053	.1622
	4.517	.60	-.2071	.1695
	4.968	.66	-.2343	.1777
	5.420	.72	-.3236	.1891
	5.872	.78	-.3590	.2064
	6.474	.86	-.3919	.2297
	6.926	.92	-.3934	.2353
	7.227	.96	-.3763	.2475
	7.453	.99	-.3395	.2855
19.9	2.077	.20		.1462
	3.116	.30	-.1826	.1477
	4.154	.40	-.2137	.1530
	4.570	.44	-.2248	
	4.985	.48	-.2380	.1580
	5.401	.52	-.2438	
	5.816	.56	-.2433	.1688
	6.232	.60	-.2360	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.3310	.1815
	7.062	.68	-.3477	
	7.478	.72	-.3636	.1895
	7.893	.76	-.3740	.1984
	8.309	.80	-.3852	.2123
	8.724	.84	-.3873	.2255
	9.140	.88	-.3827	.2497
	9.555	.92	-.3791	.2593
	9.970	.96	-.3521	.2838
	10.282	.99	-.2941	.3459
24.4	4.575	.34	-.1919	.1294
	5.323	.40	-.2257	.1339
	5.855	.44	-.2422	
	6.388	.48	-.2575	.1271
	6.920	.52	-.2674	
	7.453	.56	-.2613	.1275
	7.985	.60	-.3265	
	8.517	.64	-.3359	.1325
	9.049	.68	-.3717	
	9.582	.72	-.3824	.1450
	10.114	.76	-.3878	.1535
	10.646	.80	-.3841	.1633
	10.179	.84	-.3819	.1746
	11.711	.88	-.3679	.1976
	12.243	.92	-.3685	.2169
	12.776	.96	-.3573	.2562
	13.042	.98	-.3687	.2611
	13.175	.99	-.3555	.3107

TABLE B2.- Continued

MACH = 1.58 ALPHA =13.89 POINT = 23

PO = 1076.03 PSF P = 260.76 PSF Q = 455.67 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1595	.2515
	2.570	.52	-.1887	
	3.163	.64	-.2994	.2603
	3.855	.78	-.3402	.2666
	4.350	.88	-.3725	.2792
	4.696	.95	-.3766	.3218
	4.893	.99	-.3234	.3290
15.5	2.484	.33	-.1672	
	3.011	.40	-.1859	.1730
	3.538	.47	-.2042	.1778
	4.065	.54	-.2117	.1854
	4.517	.60	-.2427	.1919
	4.968	.66	-.3244	.1986
	5.420	.72	-.3666	.2111
	5.872	.78	-.3951	.2282
	6.474	.86	-.4187	.2453
	6.926	.92	-.4188	.2554
	7.227	.96	-.4046	.2759
	7.453	.99	-.3704	.3187
19.9	2.077	.20		.1668
	3.116	.30	-.1902	.1663
	4.154	.40	-.2218	.1725
	4.570	.44	-.2303	
	4.985	.48	-.2591	.1795
	5.401	.52	-.2546	
	5.816	.56	-.2445	.1888
	6.232	.60	-.3520	
19.9	6.647	.64	-.3787	.2002
	7.062	.68	-.3807	
	7.478	.72	-.3868	.2109
	7.893	.76	-.3978	.2224
	8.309	.80	-.4069	.2338
	8.724	.84	-.4071	.2482
	9.140	.88	-.4036	.2763
	9.555	.92	-.4020	.2864
	9.970	.96	-.3790	.3127
	10.282	.99	-.3413	.3777
24.4	4.575	.34	-.2105	.1498
	5.323	.40	-.2341	.1546
	5.855	.44	-.2495	
	6.388	.48	-.2576	.1477
	6.920	.52	-.2935	
	7.453	.56	-.3442	.1469
	7.985	.60	-.3691	
	8.517	.64	-.3794	.1496
	9.049	.68	-.3783	
	9.582	.72	-.3795	.1626
	10.114	.76	-.3885	.1737
	10.646	.80	-.3969	.1863
	10.179	.84	-.4014	.2005
	11.711	.88	-.3905	.2242
	12.243	.92	-.3945	.2436
	12.776	.96	-.3871	.2839
	13.042	.98	-.4022	.2978
	13.175	.99	-.3929	.3432

TABLE B2.- Continued

MACH = 1.58 ALPHA = 5.91 POINT = 24

PO = 1072.93 PSF P = 260.00 PSF Q = 454.35 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0686	.1036
	2.570	.52	-.0772	
	3.163	.64	-.0831	.0994
	3.855	.78	-.0708	.0900
	4.350	.88	-.0679	.0725
	4.696	.95	-.0353	.0200
	4.893	.99	.0474	-.0047
15.5	2.484	.33	-.0747	
	3.011	.40	-.0866	.0293
	3.538	.47	-.0961	.0342
	4.065	.54	-.0955	.0428
	4.517	.60	-.0897	.0488
	4.968	.66	-.0782	.0535
	5.420	.72	-.0682	.0575
	5.872	.78	-.0739	.0596
	6.474	.86	-.0760	.0551
	6.926	.92	-.0720	.0281
	7.227	.96	-.0485	-.0432
	7.453	.99	.0150	-.1036
19.9	2.077	.20		.0184
	3.116	.30	-.1121	.0199
	4.154	.40	-.1348	.0270
	4.570	.44	-.1412	
	4.985	.48	-.1448	.0318
	5.401	.52	-.1418	
	5.816	.56	-.1404	.0323
	6.232	.60	-.1372	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1312	.0323
	7.062	.68	-.1217	
	7.478	.72	-.1124	.0231
	7.893	.76	-.1001	.0293
	8.309	.80	-.0898	.0398
	8.724	.84	-.0975	.0517
	9.140	.88	-.1047	.0730
	9.555	.92	-.1209	.0606
	9.970	.96	-.0783	-.0732
	10.282	.99	.0434	-.1200
24.4	4.575	.34	-.1355	-.0006
	5.323	.40	-.1501	.0029
	5.855	.44	-.1622	
	6.388	.48	-.1738	-.0038
	6.920	.52	-.1756	
	7.453	.56	-.1731	-.0068
	7.985	.60	-.1686	
	8.517	.64	-.1624	-.0121
	9.049	.68	-.1545	
	9.582	.72	-.1436	-.0159
	10.114	.76	-.1315	-.0158
	10.646	.80	-.1232	-.0106
	10.179	.84	-.1180	-.0027
	11.711	.88	-.1203	.0180
	12.243	.92	-.1339	.0385
	12.776	.96	-.0966	-.0902
	13.042	.98	-.0832	-.1090
	13.175	.99	-.0195	-.1203

TABLE B2.- Continued

MACH = 1.62   ALPHA = 5.98   POINT = 25

PO = 1084.46 PSF   P = 247.68 PSF   Q = 455.01 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0657	.1097
	2.570	.52	-.0780	
	3.163	.64	-.0827	.1074
	3.855	.78	-.0691	.0920
	4.350	.88	-.0654	.0719
	4.696	.95	-.0327	.0128
	4.893	.99	.0488	-.0085
15.5	2.484	.33	-.0785	
	3.011	.40	-.0864	.0338
	3.538	.47	-.0922	.0378
	4.065	.54	-.0938	.0460
	4.517	.60	-.0890	.0538
	4.968	.66	-.0788	.0562
	5.420	.72	-.0712	.0576
	5.872	.78	-.0744	.0592
	6.474	.86	-.0696	.0574
	6.926	.92	-.0654	.0321
	7.227	.96	-.0419	-.0394
	7.453	.99	.0250	-.1000
19.9	2.077	.20		.0203
	3.116	.30	-.1101	.0218
	4.154	.40	-.1293	.0262
	4.570	.44	-.1354	
	4.985	.48	-.1425	.0282
	5.401	.52	-.1438	
	5.816	.56	-.1412	.0331
	6.232	.60	-.1355	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1282	.0357
	7.062	.68	-.1184	
	7.478	.72	-.1066	.0326
	7.893	.76	-.0954	.0384
	8.309	.80	-.0896	.0480
	8.724	.84	-.0972	.0601
	9.140	.88	-.1013	.0787
	9.555	.92	-.1145	.0599
	9.970	.96	-.0664	-.0716
	10.282	.99	.0640	-.1167
24.4	4.575	.34	-.1347	.0032
	5.323	.40	-.1504	.0046
	5.855	.44	-.1622	
	6.388	.48	-.1701	-.0030
	6.920	.52	-.1745	
	7.453	.56	-.1755	-.0052
	7.985	.60	-.1674	
	8.517	.64	-.1600	-.0101
	9.049	.68	-.1508	
	9.582	.72	-.1397	-.0112
	10.114	.76	-.1268	-.0139
	10.646	.80	-.1183	-.0106
	10.179	.84	-.1185	-.0028
	11.711	.88	-.1168	.0197
	12.243	.92	-.1275	.0396
	12.776	.96	-.0951	-.0894
	13.042	.98	-.0841	-.1081
	13.175	.99	-.0185	-.1211

TABLE B2.- Continued

MACH = 1.62 ALPHA = 7.92 POINT = 26

PO = 1083.46 PSF P = 247.45 PSF Q = 454.59 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0904	.1450
	2.570	.52	-.1081	
	3.163	.64	-.1172	.1432
	3.855	.78	-.1203	.1341
	4.350	.88	-.1336	.1269
	4.696	.95	-.1173	.1145
	4.893	.99	-.0377	.1175
15.5	2.484	.33	-.0991	
	3.011	.40	-.1107	.0632
	3.538	.47	-.1254	.0667
	4.065	.54	-.1279	.0772
	4.517	.60	-.1253	.0851
	4.968	.66	-.1180	.0879
	5.420	.72	-.1174	.0952
	5.872	.78	-.1248	.1022
	6.474	.86	-.1459	.1067
	6.926	.92	-.1686	.0938
	7.227	.96	-.1558	.0588
	7.453	.99	-.0762	.0528
19.9	2.077	.20		.0513
	3.116	.30	-.1316	.0541
	4.154	.40	-.1552	.0596
	4.570	.44	-.1646	
	4.985	.48	-.1732	.0660
	5.401	.52	-.1738	
	5.816	.56	-.1724	.0700
	6.232	.60	-.1693	
19.9	6.647	.64	-.1648	.0754
	7.062	.68	-.1570	
	7.478	.72	-.1499	.0741
	7.893	.76	-.1483	.0818
	8.309	.80	-.1464	.0914
	8.724	.84	-.1853	.1045
	9.140	.88	-.2000	.1243
	9.555	.92	-.2036	.1260
	9.970	.96	-.1646	.0921
	10.282	.99	-.0386	.0326
24.4	4.575	.34	-.1536	.0360
	5.323	.40	-.1748	.0385
	5.855	.44	-.1883	
	6.388	.48	-.2000	.0313
	6.920	.52	-.2060	
	7.453	.56	-.2046	.0302
	7.985	.60	-.2004	
	8.517	.64	-.1944	.0274
	9.049	.68	-.1861	
	9.582	.72	-.1768	.0278
	10.114	.76	-.1699	.0319
	10.646	.80	-.1758	.0403
	10.179	.84	-.2094	.0460
	11.711	.88	-.2110	.0659
	12.243	.92	-.2092	.0837
	12.776	.96	-.1734	.0881
	13.042	.98	-.1656	.0477
	13.175	.99	-.1036	.0092

TABLE B2.- Continued

MACH = 1.62 ALPHA = 8.98 POINT = 27

PO = 1084.59 PSF P = 247.71 PSF Q = 455.06 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1045	.1617
	2.570	.52	-.1261	
	3.163	.64	-.1412	.1599
	3.855	.78	-.1541	.1536
	4.350	.88	-.1743	.1497
	4.696	.95	-.1661	.1572
	4.893	.99	-.0950	.1742
15.5	2.484	.33	-.1100	
	3.011	.40	-.1251	.0807
	3.538	.47	-.1402	.0846
	4.065	.54	-.1464	.0967
	4.517	.60	-.1451	.1034
	4.968	.66	-.1390	.1082
	5.420	.72	-.1399	.1173
	5.872	.78	-.1572	.1250
	6.474	.86	-.2032	.1330
	6.926	.92	-.2283	.1257
	7.227	.96	-.2135	.1040
	7.453	.99	-.1439	.1144
19.9	2.077	.20		.0702
	3.116	.30	-.1428	.0742
	4.154	.40	-.1696	.0801
	4.570	.44	-.1795	
	4.985	.48	-.1861	.0891
	5.401	.52	-.1879	
	5.816	.56	-.1888	.0915
	6.232	.60	-.1874	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1850	.0963
	7.062	.68	-.1780	
	7.478	.72	-.1770	.0963
	7.893	.76	-.1744	.1018
	8.309	.80	-.2022	.1129
	8.724	.84	-.2471	.1270
	9.140	.88	-.2508	.1488
	9.555	.92	-.2485	.1544
	9.970	.96	-.1996	.1468
	10.282	.99	-.0979	.1266
24.4	4.575	.34	-.1593	.0557
	5.323	.40	-.1868	.0610
	5.855	.44	-.2011	
	6.388	.48	-.2150	.0530
	6.920	.52	-.2194	
	7.453	.56	-.2200	.0512
	7.985	.60	-.2171	
	8.517	.64	-.2114	.0489
	9.049	.68	-.2049	
	9.582	.72	-.1969	.0497
	10.114	.76	-.2031	.0534
	10.646	.80	-.2472	.0624
	10.179	.84	-.2611	.0739
	11.711	.88	-.2532	.0948
	12.243	.92	-.2470	.1099
	12.776	.96	-.2082	.1237
	13.042	.98	-.1957	.1075
	13.175	.99	-.1579	.0943

ORIGINAL PAGE IS OF POOR QUALITY

TABLE B2.- Continued

MACH = 1.62 ALPHA = 9.92 POINT = 28

PO = 1085.04 PSF P = 247.81 PSF Q = 455.25 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1140	.1819
	2.570	.52	-.1394	
	3.163	.64	-.1565	.1803
	3.855	.78	-.1817	.1771
	4.350	.88	-.2120	.1764
	4.696	.95	-.2110	.1952
	4.893	.99	-.1394	.2193
15.5	2.484	.33	-.1207	
	3.011	.40	-.1379	.0966
	3.538	.47	-.1541	.1018
	4.065	.54	-.1616	.1104
	4.517	.60	-.1615	.1171
	4.968	.66	-.1581	.1243
	5.420	.72	-.1628	.1336
	5.872	.78	-.1988	.1430
	6.474	.86	-.2575	.1551
	6.926	.92	-.2740	.1549
	7.227	.96	-.2427	.1485
	7.453	.99	-.1949	.1685
19.9	2.077	.20		.0875
	3.116	.30	-.1513	.0894
	4.154	.40	-.1810	.0969
	4.570	.44	-.1915	
	4.985	.48	-.1983	.1051
	5.401	.52	-.2021	
	5.816	.56	-.2040	.1119
	6.232	.60	-.2030	
19.9	6.647	.64	-.2012	.1155
	7.062	.68	-.1953	
	7.478	.72	-.1995	.1184
	7.893	.76	-.2274	.1257
	8.309	.80	-.2702	.1378
	8.724	.84	-.2841	.1512
	9.140	.88	-.2809	.1763
	9.555	.92	-.2739	.1814
	9.970	.96	-.2355	.1886
	10.282	.99	-.1461	.1944
24.4	4.575	.34	-.1607	.0733
	5.323	.40	-.1964	.0777
	5.855	.44	-.2140	
	6.388	.48	-.2284	.0707
	6.920	.52	-.2312	
	7.453	.56	-.2338	.0683
	7.985	.60	-.2315	
	8.517	.64	-.2253	.0679
	9.049	.68	-.2195	
	9.582	.72	-.2282	.0707
	10.114	.76	-.2784	.0779
	10.646	.80	-.2874	.0880
	10.179	.84	-.2911	.1002
	11.711	.88	-.2802	.1230
	12.243	.92	-.2700	.1383
	12.776	.96	-.2339	.1610
	13.042	.98	-.2361	.1534
	13.175	.99	-.2025	.1604

ORIGINAL PAGE IS OF POOR QUALITY

TABLE B2.- Continued

MACH = 1.62 ALPHA =10.95 POINT = 29

PO = 1085.10 PSF P = 247.82 PSF Q = 455.27 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1254	.2004
	2.570	.52	-.1526	
	3.163	.64	-.1776	.1997
	3.855	.78	-.2212	.1992
	4.350	.88	-.2551	.2014
	4.696	.95	-.2602	.2285
	4.893	.99	-.1876	.2582
15.5	2.484	.33	-.1350	
	3.011	.40	-.1503	.1151
	3.538	.47	-.1672	.1205
	4.065	.54	-.1764	.1282
	4.517	.60	-.1789	.1369
	4.968	.66	-.1765	.1440
	5.420	.72	-.2000	.1543
	5.872	.78	-.2532	.1633
	6.474	.86	-.3050	.1787
	6.926	.92	-.3064	.1831
	7.227	.96	-.2828	.1870
	7.453	.99	-.2406	.2171
19.9	2.077	.20		.1072
	3.116	.30	-.1601	.1089
	4.154	.40	-.1926	.1201
	4.570	.44	-.2021	
	4.985	.48	-.2113	.1246
	5.401	.52	-.2169	
	5.816	.56	-.2201	.1330
	6.232	.60	-.2183	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.2127	.1392
	7.062	.68	-.2242	
	7.478	.72	-.2592	.1393
	7.893	.76	-.2968	.1471
	8.309	.80	-.3106	.1616
	8.724	.84	-.3131	.1777
	9.140	.88	-.3102	.2043
	9.555	.92	-.3058	.2121
	9.970	.96	-.2734	.2244
	10.282	.99	-.1889	.2553
24.4	4.575	.34	-.1591	.0912
	5.323	.40	-.2059	.0971
	5.855	.44	-.2261	
	6.388	.48	-.2385	.0921
	6.920	.52	-.2445	
	7.453	.56	-.2458	.0886
	7.985	.60	-.2429	
	8.517	.64	-.2427	.0886
	9.049	.68	-.2586	
	9.582	.72	-.3079	.0924
	10.114	.76	-.3168	.0994
	10.646	.80	-.3173	.1107
	10.179	.84	-.3179	.1253
	11.711	.88	-.3051	.1493
	12.243	.92	-.2950	.1641
	12.776	.96	-.2719	.1974
	13.042	.98	-.2746	.1943
	13.175	.99	-.2473	.2207

TABLE B2.- Continued

MACH = 1.62 ALPHA =11.93 POINT = 30

PO = 1085.64 PSF P = 247.95 PSF Q = 455.50 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1382	.2186
	2.570	.52	-.1673	
	3.163	.64	-.1979	.2198
	3.855	.78	-.2614	.2197
	4.350	.88	-.3016	.2271
	4.696	.95	-.2887	.2597
	4.893	.99	-.2292	.2843
15.5	2.484	.33	-.1480	
	3.011	.40	-.1629	.1318
	3.538	.47	-.1793	.1363
	4.065	.54	-.1894	.1458
	4.517	.60	-.1916	.1550
	4.968	.66	-.1977	.1631
	5.420	.72	-.2685	.1730
	5.872	.78	-.3062	.1862
	6.474	.86	-.3387	.2034
	6.926	.92	-.3377	.2118
	7.227	.96	-.3197	.2210
	7.453	.99	-.2806	.2600
19.9	2.077	.20		.1265
	3.116	.30	-.1692	.1294
	4.154	.40	-.2001	.1382
	4.570	.44	-.2107	
	4.985	.48	-.2220	.1443
	5.401	.52	-.2281	
	5.816	.56	-.2308	.1549
	6.232	.60	-.2248	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.2535	.1640
	7.062	.68	-.2906	
	7.478	.72	-.3200	.1664
	7.893	.76	-.3338	.1710
	8.309	.80	-.3382	.1841
	8.724	.84	-.3397	.1994
	9.140	.88	-.3368	.2293
	9.555	.92	-.3340	.2368
	9.970	.96	-.3009	.2557
	10.282	.99	-.2251	.3035
24.4	4.575	.34	-.1673	.1099
	5.323	.40	-.2179	.1165
	5.855	.44	-.2343	
	6.388	.48	-.2462	.1101
	6.920	.52	-.2541	
	7.453	.56	-.2537	.1103
	7.985	.60	-.2503	
	8.517	.64	-.2867	.1107
	9.049	.68	-.3336	
	9.582	.72	-.3424	.1171
	10.114	.76	-.3428	.1226
	10.646	.80	-.3418	.1339
	10.179	.84	-.3428	.1504
	11.711	.88	-.3262	.1709
	12.243	.92	-.3196	.1912
	12.776	.96	-.3035	.2282
	13.042	.98	-.3088	.2276
	13.175	.99	-.2886	.2680

TABLE B2.- Continued

MACH = 1.62   ALPHA =12.91   POINT = 31

PO = 1085.45 PSF   P = 247.90 PSF   Q = 455.42 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1480	.2386
	2.570	.52	-.1784	
	3.163	.64	-.2367	.2413
	3.855	.78	-.3010	.2444
	4.350	.88	-.3322	.2547
	4.696	.95	-.3202	.2934
	4.893	.99	-.2640	.3107
15.5	2.484	.33	-.1554	
	3.011	.40	-.1720	.1506
	3.538	.47	-.1898	.1544
	4.065	.54	-.1993	.1630
	4.517	.60	-.2049	.1732
	4.968	.66	-.2625	.1821
	5.420	.72	-.3203	.1926
	5.872	.78	-.3442	.2065
	6.474	.86	-.3661	.2266
	6.926	.92	-.3665	.2414
	7.227	.96	-.3512	.2546
	7.453	.99	-.3134	.2905
19.9	2.077	.20		.1465
	3.116	.30	-.1781	.1506
	4.154	.40	-.2086	.1577
	4.570	.44	-.2196	
	4.985	.48	-.2371	.1640
	5.401	.52	-.2384	
	5.816	.56	-.2349	.1735
	6.232	.60	-.2773	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.3267	.1848
	7.062	.68	-.3365	
	7.478	.72	-.3517	.1916
	7.893	.76	-.3598	.1990
	8.309	.80	-.3624	.2115
	8.724	.84	-.3637	.2294
	9.140	.88	-.3609	.2553
	9.555	.92	-.3567	.2620
	9.970	.96	-.3260	.2857
	10.282	.99	-.2639	.3452
24.4	4.575	.34	-.1933	.1299
	5.323	.40	-.2269	.1349
	5.855	.44	-.2404	
	6.388	.48	-.2527	.1280
	6.920	.52	-.2622	
	7.453	.56	-.2667	.1305
	7.985	.60	-.3296	
	8.517	.64	-.3431	.1318
	9.049	.68	-.3619	
	9.582	.72	-.3656	.1391
	10.114	.76	-.3653	.1462
	10.646	.80	-.3634	.1593
	10.179	.84	-.3617	.1742
	11.711	.88	-.3447	.1976
	12.243	.92	-.3431	.2193
	12.776	.96	-.3309	.2596
	13.042	.98	-.3404	.2625
	13.175	.99	-.3255	.3093

TABLE B2.- Continued

MACH = 1.62 ALPHA =13.92 POINT = 32

PO = 1085.71 PSF P = 247.96 PSF Q = 455.53 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1557	.2564
	2.570	.52	-.1867	
	3.163	.64	-.2913	.2616
	3.855	.78	-.3262	.2676
	4.350	.88	-.3553	.2788
	4.696	.95	-.3521	.3219
	4.893	.99	-.2956	.3347
15.5	2.484	.33	-.1624	
	3.011	.40	-.1832	.1705
	3.538	.47	-.1978	.1747
	4.065	.54	-.2097	.1846
	4.517	.60	-.2548	.1930
	4.968	.66	-.3357	.2014
	5.420	.72	-.3547	.2137
	5.872	.78	-.3727	.2297
	6.474	.86	-.3937	.2542
	6.926	.92	-.3937	.2666
	7.227	.96	-.3785	.2805
	7.453	.99	-.3417	.3162
19.9	2.077	.20		.1667
	3.116	.30	-.1872	.1747
	4.154	.40	-.2165	.1793
	4.570	.44	-.2269	
	4.985	.48	-.2542	.1855
	5.401	.52	-.2460	
	5.816	.56	-.2473	.1948
	6.232	.60	-.3521	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.3615	.2040
	7.062	.68	-.3645	
	7.478	.72	-.3728	.2128
	7.893	.76	-.3821	.2213
	8.309	.80	-.3854	.2380
	8.724	.84	-.3844	.2578
	9.140	.88	-.3808	.2812
	9.555	.92	-.3759	.2909
	9.970	.96	-.3514	.3180
	10.282	.99	-.3068	.3815
24.4	4.575	.34	-.2171	.1525
	5.323	.40	-.2329	.1567
	5.855	.44	-.2446	
	6.388	.48	-.2612	.1486
	6.920	.52	-.2968	
	7.453	.56	-.3484	.1502
	7.985	.60	-.3532	
	8.517	.64	-.3624	.1541
	9.049	.68	-.3640	
	9.582	.72	-.3698	.1645
	10.114	.76	-.3830	.1723
	10.646	.80	-.3823	.1834
	10.179	.84	-.3788	.1987
	11.711	.88	-.3642	.2257
	12.243	.92	-.3671	.2472
	12.776	.96	-.3584	.2899
	13.042	.98	-.3710	.2985
	13.175	.99	-.3591	.3487

TABLE B2.- Continued

MACH = 1.62 ALPHA = 5.98 POINT = 33

PO = 1085.87 PSF P = 248.00 PSF Q = 455.60 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0660	.1086
	2.570	.52	-.0789	
	3.163	.64	-.0833	.1062
	3.855	.78	-.0689	.0914
	4.350	.88	-.0651	.0732
	4.696	.95	-.0345	.0165
	4.893	.99	.0517	-.0100
15.5	2.484	.33	-.0790	
	3.011	.40	-.0868	.0335
	3.538	.47	-.0929	.0380
	4.065	.54	-.0937	.0475
	4.517	.60	-.0887	.0555
	4.968	.66	-.0782	.0582
	5.420	.72	-.0709	.0597
	5.872	.78	-.0743	.0610
	6.474	.86	-.0687	.0593
	6.926	.92	-.0644	.0314
	7.227	.96	-.0412	-.0403
	7.453	.99	.0247	-.0995
19.9	2.077	.20		.0202
	3.116	.30	-.1101	.0229
	4.154	.40	-.1292	.0278
	4.570	.44	-.1347	
	4.985	.48	-.1420	.0299
	5.401	.52	-.1439	
	5.816	.56	-.1405	.0346
	6.232	.60	-.1352	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1276	.0361
	7.062	.68	-.1184	
	7.478	.72	-.1076	.0318
	7.893	.76	-.0960	.0378
	8.309	.80	-.0894	.0469
	8.724	.84	-.0977	.0592
	9.140	.88	-.1017	.0778
	9.555	.92	-.1146	.0634
	9.970	.96	-.0661	-.0699
	10.282	.99	.0628	-.1164
24.4	4.575	.34	-.1349	.0036
	5.323	.40	-.1504	.0060
	5.855	.44	-.1622	
	6.388	.48	-.1696	-.0015
	6.920	.52	-.1743	
	7.453	.56	-.1752	-.0035
	7.985	.60	-.1666	
	8.517	.64	-.1598	-.0086
	9.049	.68	-.1504	
	9.582	.72	-.1394	-.0115
	10.114	.76	-.1276	-.0152
	10.646	.80	-.1187	-.0111
	10.179	.84	-.1180	-.0042
	11.711	.88	-.1176	.0190
	12.243	.92	-.1282	.0406
	12.776	.96	-.0953	-.0865
	13.042	.98	-.0839	-.1052
	13.175	.99	-.0196	-.1166

TABLE B2.- Continued

MACH = 1.66 ALPHA = 6.02 POINT = 34

PO = 1099.87 PSF P = 236.64 PSF Q = 456.45 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0663	.1087
	2.570	.52	-.0743	
	3.163	.64	-.0755	.1043
	3.855	.78	-.0645	.0914
	4.350	.88	-.0592	.0678
	4.696	.95	-.0269	.0094
	4.893	.99	.0595	-.0146
15.5	2.484	.33	-.0788	
	3.011	.40	-.0895	.0342
	3.538	.47	-.0944	.0400
	4.065	.54	-.0921	.0497
	4.517	.60	-.0873	.0550
	4.968	.66	-.0777	.0581
	5.420	.72	-.0683	.0627
	5.872	.78	-.0690	.0621
	6.474	.86	-.0645	.0580
	6.926	.92	-.0593	.0273
	7.227	.96	-.0331	-.0486
	7.453	.99	.0374	-.1155
19.9	2.077	.20		.0251
	3.116	.30	-.1052	.0204
	4.154	.40	-.1265	.0247
	4.570	.44	-.1327	
	4.985	.48	-.1371	.0296
	5.401	.52	-.1351	
	5.816	.56	-.1357	.0355
	6.232	.60	-.1337	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1269	.0365
	7.062	.68	-.1177	
	7.478	.72	-.1056	.0337
	7.893	.76	-.0919	.0410
	8.309	.80	-.0852	.0523
	8.724	.84	-.0913	.0627
	9.140	.88	-.0944	.0836
	9.555	.92	-.1048	.0550
	9.970	.96	-.0536	-.0723
	10.282	.99	.0759	-.1236
24.4	4.575	.34	-.1344	.0075
	5.323	.40	-.1485	.0112
	5.855	.44	-.1585	
	6.388	.48	-.1655	.0050
	6.920	.52	-.1682	
	7.453	.56	-.1699	.0027
	7.985	.60	-.1672	
	8.517	.64	-.1558	-.0061
	9.049	.68	-.1462	
	9.582	.72	-.1381	-.0084
	10.114	.76	-.1256	-.0077
	10.646	.80	-.1165	-.0036
	10.179	.84	-.1151	.0044
	11.711	.88	-.1080	.0272
	12.243	.92	-.1133	.0440
	12.776	.96	-.0765	-.0892
	13.042	.98	-.0690	-.1034
	13.175	.99	-.0080	-.1202

ORIGINAL PAGE IS OF POOR QUALITY

TABLE B2.- Continued

MACH = 1.66 ALPHA = 7.97 POINT = 35

PO = 1100.31 PSF P = 236.73 PSF Q = 456.64 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0929	.1409
	2.570	.52	-.1092	
	3.163	.64	-.1160	.1419
	3.855	.78	-.1167	.1318
	4.350	.88	-.1262	.1197
	4.696	.95	-.1070	.1032
	4.893	.99	-.0253	.1116
15.5	2.484	.33	-.1030	
	3.011	.40	-.1136	.0641
	3.538	.47	-.1212	.0692
	4.065	.54	-.1250	.0789
	4.517	.60	-.1269	.0866
	4.968	.66	-.1175	.0910
	5.420	.72	-.1142	.0969
	5.872	.78	-.1196	.0996
	6.474	.86	-.1428	.1033
	6.926	.92	-.1594	.0895
	7.227	.96	-.1418	.0515
	7.453	.99	-.0586	.0416
19.9	2.077	.20		.0534
	3.116	.30	-.1277	.0515
	4.154	.40	-.1520	.0554
	4.570	.44	-.1593	
	4.985	.48	-.1667	.0626
	5.401	.52	-.1696	
	5.816	.56	-.1713	.0712
	6.232	.60	-.1673	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1659	.0734
	7.062	.68	-.1574	
	7.478	.72	-.1498	.0724
	7.893	.76	-.1422	.0803
	8.309	.80	-.1421	.0937
	8.724	.84	-.1802	.1068
	9.140	.88	-.1885	.1272
	9.555	.92	-.1864	.1278
	9.970	.96	-.1458	.0864
	10.282	.99	-.0118	.0207
24.4	4.575	.34	-.1539	.0394
	5.323	.40	-.1738	.0439
	5.855	.44	-.1857	
	6.388	.48	-.1945	.0374
	6.920	.52	-.2011	
	7.453	.56	-.2045	.0382
	7.985	.60	-.1975	
	8.517	.64	-.1894	.0306
	9.049	.68	-.1857	
	9.582	.72	-.1764	.0307
	10.114	.76	-.1696	.0336
	10.646	.80	-.1731	.0408
	10.179	.84	-.2029	.0506
	11.711	.88	-.1944	.0701
	12.243	.92	-.1893	.0876
	12.776	.96	-.1578	.0934
	13.042	.98	-.1567	.0488
	13.175	.99	-.0912	.0061

TABLE B2.- Continued

MACH = 1.66 ALPHA = 9.02 POINT = 36

PO = 1099.40 PSF P = 236.54 PSF Q = 456.26 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1043	.1589
	2.570	.52	-.1241	
	3.163	.64	-.1378	.1616
	3.855	.78	-.1487	.1544
	4.350	.88	-.1665	.1491
	4.696	.95	-.1506	.1476
	4.893	.99	-.0763	.1652
15.5	2.484	.33	-.1141	
	3.011	.40	-.1251	.0825
	3.538	.47	-.1355	.0865
	4.065	.54	-.1449	.0957
	4.517	.60	-.1474	.1043
	4.968	.66	-.1415	.1093
	5.420	.72	-.1370	.1148
	5.872	.78	-.1532	.1205
	6.474	.86	-.1947	.1278
	6.926	.92	-.2112	.1210
	7.227	.96	-.1931	.0979
	7.453	.99	-.1186	.1043
19.9	2.077	.20		.0693
	3.116	.30	-.1399	.0708
	4.154	.40	-.1654	.0738
	4.570	.44	-.1746	
	4.985	.48	-.1840	.0816
	5.401	.52	-.1881	
	5.816	.56	-.1889	.0901
	6.232	.60	-.1871	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1868	.0937
	7.062	.68	-.1800	
	7.478	.72	-.1740	.0950
	7.893	.76	-.1709	.1038
	8.309	.80	-.2007	.1158
	8.724	.84	-.2328	.1312
	9.140	.88	-.2339	.1535
	9.555	.92	-.2299	.1573
	9.970	.96	-.1764	.1428
	10.282	.99	-.0635	.1158
24.4	4.575	.34	-.1578	.0574
	5.323	.40	-.1850	.0624
	5.855	.44	-.1984	
	6.388	.48	-.2093	.0556
	6.920	.52	-.2177	
	7.453	.56	-.2194	.0565
	7.985	.60	-.2131	
	8.517	.64	-.2082	.0524
	9.049	.68	-.2038	
	9.582	.72	-.1968	.0519
	10.114	.76	-.2050	.0566
	10.646	.80	-.2386	.0654
	10.179	.84	-.2432	.0755
	11.711	.88	-.2322	.0967
	12.243	.92	-.2260	.1145
	12.776	.96	-.1966	.1293
	13.042	.98	-.1793	.1089
	13.175	.99	-.1359	.0910

TABLE B2.- Continued

MACH = 1.66 ALPHA = 9.97 POINT = 37

PO = 1099.54 PSF P = 236.57 PSF Q = 456.32 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1162	.1768
	2.570	.52	-.1403	
	3.163	.64	-.1540	.1815
	3.855	.78	-.1792	.1763
	4.350	.88	-.2036	.1743
	4.696	.95	-.1956	.1868
	4.893	.99	-.1231	.2118
15.5	2.484	.33	-.1236	
	3.011	.40	-.1351	.0993
	3.538	.47	-.1506	.1038
	4.065	.54	-.1610	.1126
	4.517	.60	-.1636	.1223
	4.968	.66	-.1596	.1269
	5.420	.72	-.1606	.1338
	5.872	.78	-.1957	.1412
	6.474	.86	-.2456	.1522
	6.926	.92	-.2565	.1498
	7.227	.96	-.2231	.1376
	7.453	.99	-.1735	.1556
19.9	2.077	.20		.0866
	3.116	.30	-.1486	.0902
	4.154	.40	-.1739	.0925
	4.570	.44	-.1849	
	4.985	.48	-.1969	.1006
	5.401	.52	-.2010	
	5.816	.56	-.2015	.1074
	6.232	.60	-.2020	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.2014	.1147
	7.062	.68	-.1962	
	7.478	.72	-.1985	.1166
	7.893	.76	-.2289	.1253
	8.309	.80	-.2577	.1384
	8.724	.84	-.2673	.1538
	9.140	.88	-.2632	.1782
	9.555	.92	-.2543	.1823
	9.970	.96	-.2079	.1835
	10.282	.99	-.1165	.1892
24.4	4.575	.34	-.1585	.0767
	5.323	.40	-.1942	.0807
	5.855	.44	-.2085	
	6.388	.48	-.2218	.0740
	6.920	.52	-.2313	
	7.453	.56	-.2300	.0738
	7.985	.60	-.2268	
	8.517	.64	-.2246	.0734
	9.049	.68	-.2198	
	9.582	.72	-.2370	.0758
	10.114	.76	-.2688	.0786
	10.646	.80	-.2716	.0884
	10.179	.84	-.2718	.0991
	11.711	.88	-.2596	.1216
	12.243	.92	-.2536	.1397
	12.776	.96	-.2196	.1609
	13.042	.98	-.2151	.1505
	13.175	.99	-.1803	.1557

TABLE B2.- Continued

MACH = 1.66 ALPHA =10.97 POINT = 38

PO = 1099.82 PSF P = 236.63 PSF Q = 456.43 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1251	.1961
	2.570	.52	-.1540	
	3.163	.64	-.1726	.1999
	3.855	.78	-.2148	.1991
	4.350	.88	-.2416	.2018
	4.696	.95	-.2394	.2244
	4.893	.99	-.1632	.2506
15.5	2.484	.33	-.1319	
	3.011	.40	-.1438	.1155
	3.538	.47	-.1633	.1202
	4.065	.54	-.1742	.1309
	4.517	.60	-.1789	.1392
	4.968	.66	-.1779	.1438
	5.420	.72	-.2049	.1533
	5.872	.78	-.2461	.1609
	6.474	.86	-.2877	.1767
	6.926	.92	-.2853	.1778
	7.227	.96	-.2607	.1790
	7.453	.99	-.2169	.2023
19.9	2.077	.20		.1031
	3.116	.30	-.1593	.1081
	4.154	.40	-.1862	.1129
	4.570	.44	-.1986	
	4.985	.48	-.2089	.1193
	5.401	.52	-.2122	
	5.816	.56	-.2154	.1240
	6.232	.60	-.2143	
19.9	6.647	.64	-.2144	.1350
	7.062	.68	-.2266	
	7.478	.72	-.2606	.1401
	7.893	.76	-.2850	.1474
	8.309	.80	-.2944	.1616
	8.724	.84	-.2934	.1781
	9.140	.88	-.2888	.2027
	9.555	.92	-.2800	.2093
	9.970	.96	-.2451	.2208
	10.282	.99	-.1646	.2520
24.4	4.575	.34	-.1582	.0939
	5.323	.40	-.2027	.0978
	5.855	.44	-.2194	
	6.388	.48	-.2356	.0904
	6.920	.52	-.2426	
	7.453	.56	-.2413	.0902
	7.985	.60	-.2386	
	8.517	.64	-.2434	.0924
	9.049	.68	-.2750	
	9.582	.72	-.3010	.0970
	10.114	.76	-.3011	.1023
	10.646	.80	-.2987	.1083
	10.179	.84	-.2964	.1206
	11.711	.88	-.2847	.1453
	12.243	.92	-.2803	.1632
	12.776	.96	-.2504	.1913
	13.042	.98	-.2509	.1886
	13.175	.99	-.2229	.2115

TABLE B2.- Continued

MACH = 1.66 ALPHA =11.96 POINT = 39

PO = 1099.68 PSF P = 236.60 PSF Q = 456.37 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1359	.2169
	2.570	.52	-.1680	
	3.163	.64	-.1954	.2202
	3.855	.78	-.2530	.2206
	4.350	.88	-.2836	.2255
	4.696	.95	-.2651	.2568
	4.893	.99	-.2029	.2822
15.5	2.484	.33	-.1402	
	3.011	.40	-.1567	.1340
	3.538	.47	-.1749	.1382
	4.065	.54	-.1861	.1498
	4.517	.60	-.1940	.1577
	4.968	.66	-.2125	.1643
	5.420	.72	-.2640	.1738
	5.872	.78	-.2921	.1840
	6.474	.86	-.3190	.2002
	6.926	.92	-.3160	.2044
	7.227	.96	-.2947	.2079
	7.453	.99	-.2517	.2445
19.9	2.077	.20		.1225
	3.116	.30	-.1679	.1278
	4.154	.40	-.1989	.1384
	4.570	.44	-.2096	
	4.985	.48	-.2188	.1403
	5.401	.52	-.2223	
	5.816	.56	-.2250	.1453
	6.232	.60	-.2234	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.2651	.1542
	7.062	.68	-.2907	
	7.478	.72	-.3080	.1629
	7.893	.76	-.3181	.1726
	8.309	.80	-.3196	.1872
	8.724	.84	-.3185	.2019
	9.140	.88	-.3134	.2275
	9.555	.92	-.3077	.2360
	9.970	.96	-.2776	.2594
	10.282	.99	-.2059	.3009
24.4	4.575	.34	-.1689	.1165
	5.323	.40	-.2101	.1211
	5.855	.44	-.2296	
	6.388	.48	-.2466	.1132
	6.920	.52	-.2500	
	7.453	.56	-.2512	.1116
	7.985	.60	-.2564	
	8.517	.64	-.2989	.1143
	9.049	.68	-.3279	
	9.582	.72	-.3279	.1199
	10.114	.76	-.3230	.1268
	10.646	.80	-.3203	.1381
	10.179	.84	-.3204	.1507
	11.711	.88	-.3077	.1721
	12.243	.92	-.3012	.1891
	12.776	.96	-.2797	.2250
	13.042	.98	-.2836	.2242
	13.175	.99	-.2627	.2617

TABLE B2.- Continued

MACH = 1.66 ALPHA =12.95 POINT = 40

PO = 1099.96 PSF P = 236.66 PSF Q = 456.49 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1463	.2385
	2.570	.52	-.1781	
	3.163	.64	-.2408	.2408
	3.855	.78	-.2895	.2436
	4.350	.88	-.3124	.2522
	4.696	.95	-.2953	.2898
	4.893	.99	-.2388	.3102
15.5	2.484	.33	-.1495	
	3.011	.40	-.1681	.1524
	3.538	.47	-.1834	.1568
	4.065	.54	-.1881	.1665
	4.517	.60	-.2218	.1748
	4.968	.66	-.2814	.1822
	5.420	.72	-.3083	.1941
	5.872	.78	-.3258	.2058
	6.474	.86	-.3444	.2240
	6.926	.92	-.3414	.2322
	7.227	.96	-.3222	.2452
	7.453	.99	-.2827	.2857
19.9	2.077	.20		.1409
	3.116	.30	-.1745	.1473
	4.154	.40	-.2098	.1592
	4.570	.44	-.2173	
	4.985	.48	-.2319	.1611
	5.401	.52	-.2334	
	5.816	.56	-.2367	.1675
	6.232	.60	-.2920	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.3177	.1772
	7.062	.68	-.3286	
	7.478	.72	-.3407	.1859
	7.893	.76	-.3433	.1958
	8.309	.80	-.3433	.2101
	8.724	.84	-.3418	.2280
	9.140	.88	-.3370	.2542
	9.555	.92	-.3344	.2657
	9.970	.96	-.3072	.2914
	10.282	.99	-.2406	.3436
24.4	4.575	.34	-.1964	.1344
	5.323	.40	-.2190	.1407
	5.855	.44	-.2400	
	6.388	.48	-.2542	.1333
	6.920	.52	-.2587	
	7.453	.56	-.2784	.1319
	7.985	.60	-.3245	
	8.517	.64	-.3472	.1352
	9.049	.68	-.3520	
	9.582	.72	-.3482	.1430
	10.114	.76	-.3438	.1494
	10.646	.80	-.3408	.1616
	10.179	.84	-.3420	.1773
	11.711	.88	-.3274	.2024
	12.243	.92	-.3218	.2184
	12.776	.96	-.3069	.2572
	13.042	.98	-.3152	.2589
	13.175	.99	-.3002	.3048

TABLE B2.- Continued

MACH = 1.66 ALPHA =13.96 POINT = 41

PO = 1095.94 PSF P = 235.79 PSF Q = 454.82 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1568	.2592
	2.570	.52	-.1876	
	3.163	.64	-.2824	.2632
	3.855	.78	-.3148	.2662
	4.350	.88	-.3335	.2792
	4.696	.95	-.3262	.3205
	4.893	.99	-.2705	.3327
15.5	2.484	.33	-.1588	
	3.011	.40	-.1781	.1726
	3.538	.47	-.1909	.1773
	4.065	.54	-.2183	.1861
	4.517	.60	-.2715	.1944
	4.968	.66	-.3324	.2031
	5.420	.72	-.3383	.2147
	5.872	.78	-.3534	.2275
	6.474	.86	-.3693	.2487
	6.926	.92	-.3654	.2605
	7.227	.96	-.3498	.2837
	7.453	.99	-.3143	.3256
19.9	2.077	.20		.1638
	3.116	.30	-.1805	.1702
	4.154	.40	-.2144	.1780
	4.570	.44	-.2269	
	4.985	.48	-.2455	.1846
	5.401	.52	-.2414	
	5.816	.56	-.3015	.1944
	6.232	.60	-.3398	
19.9	6.647	.64	-.3446	.2007
	7.062	.68	-.3519	
	7.478	.72	-.3612	.2110
	7.893	.76	-.3628	.2199
	8.309	.80	-.3613	.2346
	8.724	.84	-.3598	.2523
	9.140	.88	-.3574	.2812
	9.555	.92	-.3551	.2929
	9.970	.96	-.3271	.3194
	10.282	.99	-.2776	.3821
24.4	4.575	.34	-.2155	.1548
	5.323	.40	-.2279	.1610
	5.855	.44	-.2425	
	6.388	.48	-.2747	.1528
	6.920	.52	-.2905	
	7.453	.56	-.3378	.1544
	7.985	.60	-.3494	
	8.517	.64	-.3539	.1563
	9.049	.68	-.3591	
	9.582	.72	-.3635	.1648
	10.114	.76	-.3637	.1723
	10.646	.80	-.3606	.1847
	10.179	.84	-.3593	.2030
	11.711	.88	-.3435	.2259
	12.243	.92	-.3434	.2470
	12.776	.96	-.3329	.2885
	13.042	.98	-.3454	.2954
	13.175	.99	-.3340	.3441

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE B2.- Continued

MACH = 1.66 ALPHA = 6.01 POINT = 42

PO = 1096.08 PSF P = 235.82 PSF Q = 454.88 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0672	.1079
	2.570	.52	-.0751	
	3.163	.64	-.0764	.1033
	3.855	.78	-.0656	.0907
	4.350	.88	-.0617	.0690
	4.696	.95	-.0263	.0099
	4.893	.99	.0584	-.0131
15.5	2.484	.33	-.0798	
	3.011	.40	-.0903	.0337
	3.538	.47	-.0955	.0390
	4.065	.54	-.0933	.0481
	4.517	.60	-.0887	.0531
	4.968	.66	-.0787	.0572
	5.420	.72	-.0688	.0619
	5.872	.78	-.0696	.0614
	6.474	.86	-.0658	.0565
	6.926	.92	-.0605	.0266
	7.227	.96	-.0333	-.0486
	7.453	.99	.0361	-.1139
19.9	2.077	.20		.0241
	3.116	.30	-.1065	.0189
	4.154	.40	-.1275	.0226
	4.570	.44	-.1335	
	4.985	.48	-.1377	.0289
	5.401	.52	-.1363	
	5.816	.56	-.1375	.0351
	6.232	.60	-.1358	
19.9	6.647	.64	-.1285	.0358
	7.062	.68	-.1196	
	7.478	.72	-.1069	.0333
	7.893	.76	-.0943	.0401
	8.309	.80	-.0871	.0516
	8.724	.84	-.0930	.0638
	9.140	.88	-.0959	.0813
	9.555	.92	-.1065	.0577
	9.970	.96	-.0549	-.0721
	10.282	.99	.0746	-.1239
24.4	4.575	.34	-.1353	.0064
	5.323	.40	-.1494	.0099
	5.855	.44	-.1591	
	6.388	.48	-.1661	.0028
	6.920	.52	-.1688	
	7.453	.56	-.1707	.0015
	7.985	.60	-.1679	
	8.517	.64	-.1573	-.0072
	9.049	.68	-.1471	
	9.582	.72	-.1396	-.0097
	10.114	.76	-.1266	-.0084
	10.646	.80	-.1186	-.0046
	10.179	.84	-.1161	.0037
	11.711	.88	-.1090	.0270
	12.243	.92	-.1146	.0444
	12.776	.96	-.0777	-.0880
	13.042	.98	-.0698	-.1021
	13.175	.99	-.0094	-.1148

TABLE B2.- Continued

MACH = 1.70 ALPHA = 5.93 POINT = 43

PO = 1113.12 PSF P = 225.51 PSF Q = 456.21 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0679	.1019
	2.570	.52	-.0733	
	3.163	.64	-.0749	.0961
	3.855	.78	-.0655	.0838
	4.350	.88	-.0588	.0627
	4.696	.95	-.0249	.0027
	4.893	.99	.0611	-.0226
15.5	2.484	.33	-.0764	
	3.011	.40	-.0868	.0321
	3.538	.47	-.0955	.0375
	4.065	.54	-.0956	.0477
	4.517	.60	-.0857	.0534
	4.968	.66	-.0698	.0571
	5.420	.72	-.0616	.0624
	5.872	.78	-.0645	.0646
	6.474	.86	-.0617	.0574
	6.926	.92	-.0554	.0210
	7.227	.96	-.0263	-.0587
	7.453	.99	.0471	-.1257
19.9	2.077	.20		.0198
	3.116	.30	-.1020	.0194
	4.154	.40	-.1218	.0214
	4.570	.44	-.1281	
	4.985	.48	-.1323	.0254
	5.401	.52	-.1320	
	5.816	.56	-.1318	.0304
	6.232	.60	-.1278	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1232	.0356
	7.062	.68	-.1145	
	7.478	.72	-.0997	.0325
	7.893	.76	-.0883	.0408
	8.309	.80	-.0796	.0511
	8.724	.84	-.0842	.0616
	9.140	.88	-.0863	.0752
	9.555	.92	-.0947	.0240
	9.970	.96	-.0399	-.0860
	10.282	.99	.0893	-.1389
24.4	4.575	.34	-.1317	.0092
	5.323	.40	-.1454	.0108
	5.855	.44	-.1549	
	6.388	.48	-.1620	.0007
	6.920	.52	-.1634	
	7.453	.56	-.1621	-.0031
	7.985	.60	-.1613	
	8.517	.64	-.1595	-.0050
	9.049	.68	-.1461	
	9.582	.72	-.1327	-.0085
	10.114	.76	-.1179	-.0068
	10.646	.80	-.1117	-.0019
	10.179	.84	-.1079	.0068
	11.711	.88	-.1005	.0319
	12.243	.92	-.1012	.0428
	12.776	.96	-.0580	-.0962
	13.042	.98	-.0486	-.1099
	13.175	.99	.0131	-.1264

ORIGINAL PAGE IS OF POOR QUALITY

TABLE B2.- Continued

MACH = 1.70   ALPHA = 7.91   POINT = 44

PO = 1113.27 PSF   P = 225.54 PSF   Q = 456.27 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0926	.1361
	2.570	.52	-.1049	
	3.163	.64	-.1132	.1326
	3.855	.78	-.1179	.1249
	4.350	.88	-.1230	.1149
	4.696	.95	-.1026	.0955
	4.893	.99	-.0198	.1054
15.5	2.484	.33	-.0982	
	3.011	.40	-.1112	.0621
	3.538	.47	-.1231	.0679
	4.065	.54	-.1266	.0779
	4.517	.60	-.1209	.0854
	4.968	.66	-.1111	.0911
	5.420	.72	-.1089	.0984
	5.872	.78	-.1144	.1043
	6.474	.86	-.1386	.1041
	6.926	.92	-.1496	.0858
	7.227	.96	-.1266	.0446
	7.453	.99	-.0416	.0316
19.9	2.077	.20		.0508
	3.116	.30	-.1232	.0498
	4.154	.40	-.1477	.0537
	4.570	.44	-.1553	
	4.985	.48	-.1619	.0586
	5.401	.52	-.1634	
	5.816	.56	-.1664	.0669
	6.232	.60	-.1670	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1619	.0749
	7.062	.68	-.1509	
	7.478	.72	-.1428	.0727
	7.893	.76	-.1359	.0816
	8.309	.80	-.1395	.0924
	8.724	.84	-.1749	.1049
	9.140	.88	-.1781	.1251
	9.555	.92	-.1728	.1247
	9.970	.96	-.1304	.0705
	10.282	.99	.0029	.0049
24.4	4.575	.34	-.1514	.0411
	5.323	.40	-.1696	.0461
	5.855	.44	-.1820	
	6.388	.48	-.1910	.0342
	6.920	.52	-.1953	
	7.453	.56	-.1970	.0328
	7.985	.60	-.2000	
	8.517	.64	-.1916	.0326
	9.049	.68	-.1787	
	9.582	.72	-.1684	.0316
	10.114	.76	-.1618	.0348
	10.646	.80	-.1749	.0425
	10.179	.84	-.1947	.0537
	11.711	.88	-.1812	.0737
	12.243	.92	-.1713	.0927
	12.776	.96	-.1362	.0905
	13.042	.98	-.1378	.0447
	13.175	.99	-.0721	.0004

TABLE B2.- Continued

MACH = 1.70 ALPHA = 8.90 POINT = 45

PO = 1113.38 PSF P = 225.56 PSF Q = 456.32 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1039	.1540
	2.570	.52	-.1213	
	3.163	.64	-.1302	.1538
	3.855	.78	-.1462	.1470
	4.350	.88	-.1601	.1412
	4.696	.95	-.1406	.1397
	4.893	.99	-.0618	.1554
15.5	2.484	.33	-.1099	
	3.011	.40	-.1233	.0793
	3.538	.47	-.1355	.0850
	4.065	.54	-.1405	.0943
	4.517	.60	-.1370	.1035
	4.968	.66	-.1342	.1102
	5.420	.72	-.1297	.1174
	5.872	.78	-.1489	.1221
	6.474	.86	-.1843	.1273
	6.926	.92	-.1930	.1180
	7.227	.96	-.1729	.0913
	7.453	.99	-.0918	.0938
19.9	2.077	.20		.0673
	3.116	.30	-.1341	.0665
	4.154	.40	-.1588	.0715
	4.570	.44	-.1679	
	4.985	.48	-.1752	.0774
	5.401	.52	-.1776	
	5.816	.56	-.1849	.0861
	6.232	.60	-.1858	
19.9	6.647	.64	-.1782	.0940
	7.062	.68	-.1696	
	7.478	.72	-.1628	.0940
	7.893	.76	-.1645	.1019
	8.309	.80	-.1934	.1153
	8.724	.84	-.2150	.1293
	9.140	.88	-.2144	.1496
	9.555	.92	-.2095	.1529
	9.970	.96	-.1573	.1324
	10.282	.99	-.0408	.0935
24.4	4.575	.34	-.1579	.0577
	5.323	.40	-.1802	.0620
	5.855	.44	-.1940	
	6.388	.48	-.2047	.0556
	6.920	.52	-.2095	
	7.453	.56	-.2138	.0514
	7.985	.60	-.2164	
	8.517	.64	-.2057	.0518
	9.049	.68	-.1958	
	9.582	.72	-.1878	.0531
	10.114	.76	-.2013	.0560
	10.646	.80	-.2241	.0645
	10.179	.84	-.2260	.0762
	11.711	.88	-.2121	.0980
	12.243	.92	-.2023	.1168
	12.776	.96	-.1730	.1296
	13.042	.98	-.1604	.1076
	13.175	.99	-.1184	.0833

TABLE B2.- Continued

MACH = 1.70 ALPHA = 9.92 POINT = 46

PO = 1113.54 PSF P = 225.60 PSF Q = 456.38 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1137	.1731
	2.570	.52	-.1365	
	3.163	.64	-.1506	.1744
	3.855	.78	-.1791	.1718
	4.350	.88	-.1954	.1681
	4.696	.95	-.1847	.1759
	4.893	.99	-.1059	.2016
15.5	2.484	.33	-.1220	
	3.011	.40	-.1353	.0972
	3.538	.47	-.1467	.1015
	4.065	.54	-.1560	.1129
	4.517	.60	-.1563	.1216
	4.968	.66	-.1532	.1284
	5.420	.72	-.1600	.1366
	5.872	.78	-.1931	.1420
	6.474	.86	-.2319	.1502
	6.926	.92	-.2379	.1470
	7.227	.96	-.2022	.1331
	7.453	.99	-.1493	.1499
19.9	2.077	.20		.0850
	3.116	.30	-.1450	.0848
	4.154	.40	-.1714	.0904
	4.570	.44	-.1803	
	4.985	.48	-.1882	.0966
	5.401	.52	-.1939	
	5.816	.56	-.2015	.1075
	6.232	.60	-.1999	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1930	.1141
	7.062	.68	-.1881	
	7.478	.72	-.1954	.1166
	7.893	.76	-.2237	.1248
	8.309	.80	-.2428	.1376
	8.724	.84	-.2502	.1533
	9.140	.88	-.2446	.1770
	9.555	.92	-.2354	.1819
	9.970	.96	-.1863	.1760
	10.282	.99	-.0893	.1738
24.4	4.575	.34	-.1613	.0751
	5.323	.40	-.1913	.0797
	5.855	.44	-.2059	
	6.388	.48	-.2174	.0749
	6.920	.52	-.2244	
	7.453	.56	-.2297	.0728
	7.985	.60	-.2289	
	8.517	.64	-.2197	.0703
	9.049	.68	-.2138	
	9.582	.72	-.2393	.0743
	10.114	.76	-.2569	.0781
	10.646	.80	-.2561	.0881
	10.179	.84	-.2535	.1003
	11.711	.88	-.2384	.1242
	12.243	.92	-.2304	.1427
	12.776	.96	-.2012	.1669
	13.042	.98	-.1989	.1534
	13.175	.99	-.1622	.1531

TABLE B2.- Continued

MACH = 1.70 ALPHA =10.90 POINT = 47

PO = 1113.43 PSF P = 225.57 PSF Q = 456.34 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1252	.1929
	2.570	.52	-.1500	
	3.163	.64	-.1704	.1959
	3.855	.78	-.2142	.1934
	4.350	.88	-.2320	.1936
	4.696	.95	-.2242	.2140
	4.893	.99	-.1447	.2396
15.5	2.484	.33	-.1321	
	3.011	.40	-.1438	.1140
	3.538	.47	-.1571	.1189
	4.065	.54	-.1720	.1304
	4.517	.60	-.1746	.1388
	4.968	.66	-.1754	.1469
	5.420	.72	-.2061	.1543
	5.872	.78	-.2408	.1615
	6.474	.86	-.2713	.1742
	6.926	.92	-.2650	.1743
	7.227	.96	-.2378	.1730
	7.453	.99	-.1919	.1956
19.9	2.077	.20		.1028
	3.116	.30	-.1543	.1033
	4.154	.40	-.1818	.1078
	4.570	.44	-.1913	
	4.985	.48	-.2020	.1164
	5.401	.52	-.2097	
	5.816	.56	-.2162	.1281
	6.232	.60	-.2124	
19.9	6.647	.64	-.2078	.1334
	7.062	.68	-.2245	
	7.478	.72	-.2573	.1388
	7.893	.76	-.2721	.1473
	8.309	.80	-.2771	.1611
	8.724	.84	-.2745	.1764
	9.140	.88	-.2684	.2014
	9.555	.92	-.2585	.2072
	9.970	.96	-.2194	.2140
	10.282	.99	-.1316	.2357
24.4	4.575	.34	-.1608	.0930
	5.323	.40	-.1998	.0979
	5.855	.44	-.2159	
	6.388	.48	-.2284	.0919
	6.920	.52	-.2383	
	7.453	.56	-.2429	.0963
	7.985	.60	-.2379	
	8.517	.64	-.2393	.0896
	9.049	.68	-.2736	
	9.582	.72	-.2863	.0949
	10.114	.76	-.2850	.1006
	10.646	.80	-.2807	.1115
	10.179	.84	-.2760	.1253
	11.711	.88	-.2617	.1485
	12.243	.92	-.2584	.1683
	12.776	.96	-.2338	.1976
	13.042	.98	-.2291	.1911
	13.175	.99	-.1972	.2097

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE B2.- Continued

MACH = 1.70 ALPHA =11.91 POINT = 48

PO = 1113.67 PSF P = 225.62 PSF Q = 456.44 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1349	.2116
	2.570	.52	-.1640	
	3.163	.64	-.1960	.2179
	3.855	.78	-.2482	.2167
	4.350	.88	-.2715	.2201
	4.696	.95	-.2484	.2473
	4.893	.99	-.1814	.2756
15.5	2.484	.33	-.1392	
	3.011	.40	-.1517	.1337
	3.538	.47	-.1700	.1384
	4.065	.54	-.1857	.1485
	4.517	.60	-.1892	.1585
	4.968	.66	-.2198	.1656
	5.420	.72	-.2575	.1722
	5.872	.78	-.2806	.1823
	6.474	.86	-.2990	.1983
	6.926	.92	-.2934	.2024
	7.227	.96	-.2697	.2054
	7.453	.99	-.2264	.2373
19.9	2.077	.20		.1233
	3.116	.30	-.1642	.1229
	4.154	.40	-.1911	.1284
	4.570	.44	-.2027	
	4.985	.48	-.2151	.1370
	5.401	.52	-.2210	
	5.816	.56	-.2259	.1477
	6.232	.60	-.2317	
19.9	6.647	.64	-.2585	.1543
	7.062	.68	-.2835	
	7.478	.72	-.2952	.1606
	7.893	.76	-.3002	.1704
	8.309	.80	-.3008	.1843
	8.724	.84	-.2981	.2009
	9.140	.88	-.2924	.2265
	9.555	.92	-.2843	.2332
	9.970	.96	-.2496	.2493
	10.282	.99	-.1744	.2928
24.4	4.575	.34	-.1695	.1132
	5.323	.40	-.2080	.1167
	5.855	.44	-.2247	
	6.388	.48	-.2405	.1112
	6.920	.52	-.2496	
	7.453	.56	-.2517	.1161
	7.985	.60	-.2642	
	8.517	.64	-.3038	.1135
	9.049	.68	-.3139	
	9.582	.72	-.3113	.1157
	10.114	.76	-.3058	.1235
	10.646	.80	-.3002	.1360
	10.179	.84	-.2987	.1498
	11.711	.88	-.2852	.1748
	12.243	.92	-.2830	.1961
	12.776	.96	-.2587	.2281
	13.042	.98	-.2587	.2264
	13.175	.99	-.2352	.2610

TABLE B2.- Continued

MACH = 1.70 ALPHA =12.92 POINT = 49

PO = 1113.57 PSF P = 225.60 PSF Q = 456.39 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1448	.2329
	2.570	.52	-.1761	
	3.163	.64	-.2425	.2390
	3.855	.78	-.2800	.2397
	4.350	.88	-.2962	.2464
	4.696	.95	-.2751	.2806
	4.893	.99	-.2153	.3044
15.5	2.484	.33	-.1463	
	3.011	.40	-.1617	.1531
	3.538	.47	-.1804	.1568
	4.065	.54	-.1911	.1678
	4.517	.60	-.2427	.1769
	4.968	.66	-.2802	.1830
	5.420	.72	-.2933	.1928
	5.872	.78	-.3109	.2038
	6.474	.86	-.3252	.2214
	6.926	.92	-.3206	.2302
	7.227	.96	-.3010	.2379
	7.453	.99	-.2598	.2756
19.9	2.077	.20		.1422
	3.116	.30	-.1717	.1436
	4.154	.40	-.2032	.1492
	4.570	.44	-.2144	
	4.985	.48	-.2273	.1588
	5.401	.52	-.2292	
	5.816	.56	-.2469	.1666
	6.232	.60	-.2895	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.3082	.1765
	7.062	.68	-.3182	
	7.478	.72	-.3248	.1842
	7.893	.76	-.3237	.1934
	8.309	.80	-.3215	.2093
	8.724	.84	-.3195	.2266
	9.140	.88	-.3139	.2517
	9.555	.92	-.3077	.2609
	9.970	.96	-.2797	.2893
	10.282	.99	-.2161	.3416
24.4	4.575	.34	-.1966	.1327
	5.323	.40	-.2158	.1368
	5.855	.44	-.2330	
	6.388	.48	-.2528	.1319
	6.920	.52	-.2600	
	7.453	.56	-.2910	.1349
	7.985	.60	-.3244	
	8.517	.64	-.3389	.1365
	9.049	.68	-.3372	
	9.582	.72	-.3313	.1392
	10.114	.76	-.3261	.1455
	10.646	.80	-.3209	.1589
	10.179	.84	-.3204	.1758
	11.711	.88	-.3072	.2026
	12.243	.92	-.3041	.2215
	12.776	.96	-.2838	.2593
	13.042	.98	-.2898	.2607
	13.175	.99	-.2730	.3047

TABLE B2.- Continued

MACH = 1.70 ALPHA =13.90 POINT = 50

PO = 1113.69 PSF P = 225.63 PSF Q = 456.44 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1548	.2534
	2.570	.52	-.1840	
	3.163	.64	-.2729	.2586
	3.855	.78	-.3035	.2624
	4.350	.88	-.3141	.2723
	4.696	.95	-.3035	.3130
	4.893	.99	-.2460	.3286
15.5	2.484	.33	-.1511	
	3.011	.40	-.1738	.1702
	3.538	.47	-.1880	.1763
	4.065	.54	-.2414	.1869
	4.517	.60	-.2802	.1945
	4.968	.66	-.3153	.2008
	5.420	.72	-.3172	.2126
	5.872	.78	-.3359	.2254
	6.474	.86	-.3474	.2465
	6.926	.92	-.3420	.2563
	7.227	.96	-.3247	.2722
	7.453	.99	-.2855	.3098
19.9	2.077	.20		.1623
	3.116	.30	-.1792	.1657
	4.154	.40	-.2154	.1716
	4.570	.44	-.2279	
	4.985	.48	-.2404	.1783
	5.401	.52	-.2436	
	5.816	.56	-.2996	.1877
	6.232	.60	-.3248	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.3335	.1986
	7.062	.68	-.3420	
	7.478	.72	-.3440	.2077
	7.893	.76	-.3424	.2169
	8.309	.80	-.3410	.2323
	8.724	.84	-.3373	.2488
	9.140	.88	-.3325	.2757
	9.555	.92	-.3291	.2889
	9.970	.96	-.3057	.3224
	10.282	.99	-.2533	.3774
24.4	4.575	.34	-.2161	.1525
	5.323	.40	-.2239	.1575
	5.855	.44	-.2442	
	6.388	.48	-.2730	.1524
	6.920	.52	-.2883	
	7.453	.56	-.3308	.1532
	7.985	.60	-.3409	
	8.517	.64	-.3486	.1570
	9.049	.68	-.3528	
	9.582	.72	-.3497	.1659
	10.114	.76	-.3451	.1716
	10.646	.80	-.3403	.1824
	10.179	.84	-.3405	.2003
	11.711	.88	-.3264	.2258
	12.243	.92	-.3230	.2458
	12.776	.96	-.3096	.2881
	13.042	.98	-.3201	.2942
	13.175	.99	-.3069	.3423

TABLE B2.- Continued

MACH = 1.70 ALPHA = 5.93 POINT = 51

PO = 1113.61 PSF P = 225.61 PSF Q = 456.41 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0592	.1080
	2.570	.52	-.0649	
	3.163	.64	-.0664	.1026
	3.855	.78	-.0566	.0900
	4.350	.88	-.0504	.0697
	4.696	.95	-.0160	.0108
	4.893	.99	.0680	-.0135
15.5	2.484	.33	-.0668	
	3.011	.40	-.0781	.0391
	3.538	.47	-.0863	.0447
	4.065	.54	-.0867	.0545
	4.517	.60	-.0777	.0603
	4.968	.66	-.0615	.0643
	5.420	.72	-.0526	.0694
	5.872	.78	-.0572	.0715
	6.474	.86	-.0538	.0624
	6.926	.92	-.0482	.0303
	7.227	.96	-.0195	-.0476
	7.453	.99	.0533	-.1138
19.9	2.077	.20		.0277
	3.116	.30	-.0912	.0274
	4.154	.40	-.1115	.0294
	4.570	.44	-.1173	
	4.985	.48	-.1211	.0334
	5.401	.52	-.1214	
	5.816	.56	-.1212	.0382
	6.232	.60	-.1178	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1124	.0440
	7.062	.68	-.1033	
	7.478	.72	-.0902	.0401
	7.893	.76	-.0777	.0487
	8.309	.80	-.0702	.0585
	8.724	.84	-.0756	.0690
	9.140	.88	-.0769	.0823
	9.555	.92	-.0858	.0365
	9.970	.96	-.0327	-.0732
	10.282	.99	.0973	-.1230
24.4	4.575	.34	-.1245	.0179
	5.323	.40	-.1387	.0200
	5.855	.44	-.1491	
	6.388	.48	-.1556	.0096
	6.920	.52	-.1569	
	7.453	.56	-.1560	.0063
	7.985	.60	-.1547	
	8.517	.64	-.1540	.0032
	9.049	.68	-.1397	
	9.582	.72	-.1264	.0008
	10.114	.76	-.1125	.0028
	10.646	.80	-.1057	.0069
	10.179	.84	-.1033	.0154
	11.711	.88	-.0962	.0398
	12.243	.92	-.0970	.0539
	12.776	.96	-.0534	-.0816
	13.042	.98	-.0448	-.0948
	13.175	.99	.0181	-.1025

TABLE B2.- Continued

MACH = 1.58 ALPHA = 5.93 POINT = 81

PO = 1074.58 PSF P = 260.40 PSF Q = 455.05 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0685	.1038
	2.570	.52	-.0791	
	3.163	.64	-.0853	.1007
	3.855	.78	-.0725	.0897
	4.350	.88	-.0692	.0770
	4.696	.95	-.0399	.0151
	4.893	.99	.0378	-.0023
15.5	2.484	.33	-.0746	
	3.011	.40	-.0865	.0308
	3.538	.47	-.0975	.0354
	4.065	.54	-.0969	.0426
	4.517	.60	-.0903	.0479
	4.968	.66	-.0777	.0537
	5.420	.72	-.0707	.0568
	5.872	.78	-.0777	.0598
	6.474	.86	-.0819	.0601
	6.926	.92	-.0908	.0436
	7.227	.96	-.0869	-.0071
	7.453	.99	-.0168	-.0539
19.9	2.077	.20		.0183
	3.116	.30	-.1149	.0204
	4.154	.40	-.1377	.0288
	4.570	.44	-.1442	
	4.985	.48	-.1474	.0316
	5.401	.52	-.1433	
	5.816	.56	-.1418	.0314
	6.232	.60	-.1380	
19.9	6.647	.64	-.1323	.0301
	7.062	.68	-.1218	
	7.478	.72	-.1115	.0240
	7.893	.76	-.0988	.0280
	8.309	.80	-.0889	.0366
	8.724	.84	-.0969	.0463
	9.140	.88	-.0899	.0667
	9.555	.92	-.1013	.0289
	9.970	.96	-.1308	-.0247
	10.282	.99	-.0676	-.0302
24.4	4.575	.34	-.1383	.0001
	5.323	.40	-.1525	.0025
	5.855	.44	-.1646	
	6.388	.48	-.1763	-.0047
	6.920	.52	-.1778	
	7.453	.56	-.1754	-.0080
	7.985	.60	-.1709	
	8.517	.64	-.1644	-.0123
	9.049	.68	-.1563	
	9.582	.72	-.1436	-.0168
	10.114	.76	-.1301	-.0189
	10.646	.80	-.1202	-.0141
	10.179	.84	-.1091	-.0094
	11.711	.88	-.1051	.0039
	12.243	.92	-.1066	.0101
	12.776	.96	-.1379	-.0287
	13.042	.98	-.1627	-.0583
	13.175	.99	-.0838	-.0876

TABLE B2.- Continued

MACH = 1.58 ALPHA = 7.92 POINT = 82

PO = 1074.14 PSF P = 260.30 PSF Q = 454.86 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0935	.1412
	2.570	.52	-.1097	
	3.163	.64	-.1221	.1397
	3.855	.78	-.1245	.1341
	4.350	.88	-.1398	.1281
	4.696	.95	-.1287	.1175
	4.893	.99	-.0582	.1313
15.5	2.484	.33	-.1014	
	3.011	.40	-.1145	.0639
	3.538	.47	-.1264	.0688
	4.065	.54	-.1294	.0760
	4.517	.60	-.1252	.0842
	4.968	.66	-.1176	.0908
	5.420	.72	-.1175	.0972
	5.872	.78	-.1303	.1028
	6.474	.86	-.1548	.1108
	6.926	.92	-.1926	.1091
	7.227	.96	-.2025	.1002
	7.453	.99	-.1362	.1175
19.9	2.077	.20		.0522
	3.116	.30	-.1347	.0566
	4.154	.40	-.1634	.0668
	4.570	.44	-.1698	
	4.985	.48	-.1753	.0674
	5.401	.52	-.1760	
	5.816	.56	-.1765	.0721
	6.232	.60	-.1753	
19.9	6.647	.64	-.1696	.0748
	7.062	.68	-.1614	
	7.478	.72	-.1521	.0732
	7.893	.76	-.1469	.0779
	8.309	.80	-.1446	.0861
	8.724	.84	-.1775	.0996
	9.140	.88	-.1943	.1282
	9.555	.92	-.2349	.1017
	9.970	.96	-.2518	.1042
	10.282	.99	-.1971	.1387
24.4	4.575	.34	-.1548	.0362
	5.323	.40	-.1770	.0413
	5.855	.44	-.1930	
	6.388	.48	-.2053	.0346
	6.920	.52	-.2055	
	7.453	.56	-.2081	.0319
	7.985	.60	-.2046	
	8.517	.64	-.2003	.0304
	9.049	.68	-.1918	
	9.582	.72	-.1811	.0292
	10.114	.76	-.1655	.0318
	10.646	.80	-.1664	.0389
	10.179	.84	-.1909	.0467
	11.711	.88	-.2262	.0619
	12.243	.92	-.2392	.0713
	12.776	.96	-.2421	.0775
	13.042	.98	-.2463	.0787
	13.175	.99	-.2116	.0800

TABLE B2.- Continued

MACH = 1.58 ALPHA = 8.91 POINT = 83

PO = 1074.88 PSF P = 260.48 PSF Q = 455.18 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1050	.1566
	2.570	.52	-.1267	
	3.163	.64	-.1394	.1581
	3.855	.78	-.1546	.1545
	4.350	.88	-.1782	.1525
	4.696	.95	-.1780	.1659
	4.893	.99	-.1150	.1868
15.5	2.484	.33	-.1165	
	3.011	.40	-.1286	.0798
	3.538	.47	-.1408	.0826
	4.065	.54	-.1460	.0924
	4.517	.60	-.1434	.1009
	4.968	.66	-.1385	.1075
	5.420	.72	-.1420	.1143
	5.872	.78	-.1577	.1200
	6.474	.86	-.2066	.1337
	6.926	.92	-.2497	.1378
	7.227	.96	-.2622	.1388
	7.453	.99	-.1922	.1790
19.9	2.077	.20		.0684
	3.116	.30	-.1451	.0744
	4.154	.40	-.1752	.0829
	4.570	.44	-.1822	
	4.985	.48	-.1897	.0836
	5.401	.52	-.1923	
	5.816	.56	-.1942	.0884
	6.232	.60	-.1930	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1880	.0934
	7.062	.68	-.1812	
	7.478	.72	-.1750	.0949
	7.893	.76	-.1727	.1003
	8.309	.80	-.1862	.1097
	8.724	.84	-.2506	.1238
	9.140	.88	-.2637	.1562
	9.555	.92	-.2834	.1381
	9.970	.96	-.2967	.1507
	10.282	.99	-.2488	.2020
24.4	4.575	.34	-.1601	.0527
	5.323	.40	-.1909	.0584
	5.855	.44	-.2073	
	6.388	.48	-.2164	.0516
	6.920	.52	-.2200	
	7.453	.56	-.2242	.0498
	7.985	.60	-.2224	
	8.517	.64	-.2172	.0490
	9.049	.68	-.2083	
	9.582	.72	-.1976	.0496
	10.114	.76	-.1919	.0527
	10.646	.80	-.2274	.0623
	10.179	.84	-.2694	.0727
	11.711	.88	-.2738	.0883
	12.243	.92	-.2746	.1010
	12.776	.96	-.2846	.1159
	13.042	.98	-.2872	.1314
	13.175	.99	-.2609	.1441

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE B2.- Continued

MACH = 1.58   ALPHA = 9.91   POINT = 84

PO = 1075.20 PSF   P = 260.55 PSF   Q = 455.31 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1155	.1758
	2.570	.52	-.1388	
	3.163	.64	-.1563	.1763
	3.855	.78	-.1867	.1755
	4.350	.88	-.2207	.1788
	4.696	.95	-.2297	.2036
	4.893	.99	-.1672	.2297
15.5	2.484	.33	-.1285	
	3.011	.40	-.1415	.0970
	3.538	.47	-.1549	.0989
	4.065	.54	-.1616	.1086
	4.517	.60	-.1604	.1187
	4.968	.66	-.1584	.1264
	5.420	.72	-.1661	.1359
	5.872	.78	-.1964	.1434
	6.474	.86	-.2728	.1568
	6.926	.92	-.3036	.1678
	7.227	.96	-.2934	.1761
	7.453	.99	-.2451	.2242
19.9	2.077	.20		.0876
	3.116	.30	-.1552	.0935
	4.154	.40	-.1847	.1001
	4.570	.44	-.1940	
	4.985	.48	-.2030	.1022
	5.401	.52	-.2073	
	5.816	.56	-.2087	.1097
	6.232	.60	-.2082	
19.9	6.647	.64	-.2032	.1145
	7.062	.68	-.1984	
	7.478	.72	-.1955	.1187
	7.893	.76	-.2113	.1252
	8.309	.80	-.2607	.1339
	8.724	.84	-.3008	.1512
	9.140	.88	-.3029	.1838
	9.555	.92	-.3185	.1672
	9.970	.96	-.3280	.1864
	10.282	.99	-.2901	.2558
24.4	4.575	.34	-.1600	.0723
	5.323	.40	-.2032	.0775
	5.855	.44	-.2181	
	6.388	.48	-.2277	.0702
	6.920	.52	-.2347	
	7.453	.56	-.2394	.0717
	7.985	.60	-.2360	
	8.517	.64	-.2312	.0691
	9.049	.68	-.2226	
	9.582	.72	-.2167	.0724
	10.114	.76	-.2709	.0764
	10.646	.80	-.2926	.0879
	10.179	.84	-.3116	.0981
	11.711	.88	-.3039	.1148
	12.243	.92	-.3076	.1318
	12.776	.96	-.3185	.1520
	13.042	.98	-.3232	.1784
	13.175	.99	-.3024	.1968

TABLE B2.- Continued

MACH = 1.58 ALPHA =10.91 POINT = 85

PO = 1075.35 PSF P = 260.59 PSF Q = 455.38 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1256	.1936
	2.570	.52	-.1525	
	3.163	.64	-.1740	.1979
	3.855	.78	-.2259	.2016
	4.350	.88	-.2677	.2071
	4.696	.95	-.2809	.2353
	4.893	.99	-.2158	.2654
15.5	2.484	.33	-.1412	
	3.011	.40	-.1537	.1135
	3.538	.47	-.1701	.1148
	4.065	.54	-.1793	.1246
	4.517	.60	-.1783	.1351
	4.968	.66	-.1789	.1435
	5.420	.72	-.1892	.1530
	5.872	.78	-.2498	.1621
	6.474	.86	-.3292	.1816
	6.926	.92	-.3399	.1976
	7.227	.96	-.3388	.2043
	7.453	.99	-.2911	.2589
19.9	2.077	.20		.1051
	3.116	.30	-.1680	.1126
	4.154	.40	-.1962	.1170
	4.570	.44	-.2068	
	4.985	.48	-.2162	.1203
	5.401	.52	-.2221	
	5.816	.56	-.2245	.1277
	6.232	.60	-.2237	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.2185	.1351
	7.062	.68	-.2136	
	7.478	.72	-.2446	.1424
	7.893	.76	-.2966	.1487
	8.309	.80	-.3167	.1603
	8.724	.84	-.3351	.1789
	9.140	.88	-.3403	.2174
	9.555	.92	-.3508	.1985
	9.970	.96	-.3581	.2268
	10.282	.99	-.3315	.3076
24.4	4.575	.34	-.1599	.0909
	5.323	.40	-.2136	.0956
	5.855	.44	-.2265	
	6.388	.48	-.2400	.0883
	6.920	.52	-.2471	
	7.453	.56	-.2519	.0907
	7.985	.60	-.2485	
	8.517	.64	-.2450	.0910
	9.049	.68	-.2456	
	9.582	.72	-.2993	.0941
	10.114	.76	-.3248	.1010
	10.646	.80	-.3366	.1128
	10.179	.84	-.3417	.1250
	11.711	.88	-.3319	.1416
	12.243	.92	-.3391	.1639
	12.776	.96	-.3508	.1874
	13.042	.98	-.3583	.2219
	13.175	.99	-.3422	.2456

TABLE B2.- Continued

MACH = 1.58   ALPHA =11.90   POINT = 86

PO = 1075.51 PSF   P = 260.63 PSF   Q = 455.45 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1354	.2133
	2.570	.52	-.1668	
	3.163	.64	-.1978	.2182
	3.855	.78	-.2710	.2222
	4.350	.88	-.3162	.2307
	4.696	.95	-.3102	.2617
	4.893	.99	-.2536	.2897
15.5	2.484	.33	-.1503	
	3.011	.40	-.1645	.1328
	3.538	.47	-.1829	.1358
	4.065	.54	-.1933	.1460
	4.517	.60	-.1941	.1541
	4.968	.66	-.1935	.1630
	5.420	.72	-.2617	.1725
	5.872	.78	-.3176	.1848
	6.474	.86	-.3688	.2098
	6.926	.92	-.3725	.2230
	7.227	.96	-.3714	.2336
	7.453	.99	-.3277	.2897
19.9	2.077	.20		.1266
	3.116	.30	-.1759	.1343
	4.154	.40	-.2056	.1377
	4.570	.44	-.2149	
	4.985	.48	-.2267	.1405
	5.401	.52	-.2327	
	5.816	.56	-.2356	.1497
	6.232	.60	-.2316	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.2341	.1592
	7.062	.68	-.2924	
	7.478	.72	-.3260	.1664
	7.893	.76	-.3347	.1741
	8.309	.80	-.3449	.1860
	8.724	.84	-.3645	.2053
	9.140	.88	-.3678	.2388
	9.555	.92	-.3759	.2246
	9.970	.96	-.3870	.2623
	10.282	.99	-.3658	.3481
24.4	4.575	.34	-.1681	.1127
	5.323	.40	-.2172	.1181
	5.855	.44	-.2326	
	6.388	.48	-.2476	.1097
	6.920	.52	-.2572	
	7.453	.56	-.2643	.1099
	7.985	.60	-.2620	
	8.517	.64	-.2697	.1140
	9.049	.68	-.3151	
	9.582	.72	-.3543	.1196
	10.114	.76	-.3613	.1258
	10.646	.80	-.3644	.1386
	10.179	.84	-.3641	.1480
	11.711	.88	-.3568	.1683
	12.243	.92	-.3667	.1910
	12.776	.96	-.3789	.2166
	13.042	.98	-.3895	.2633
	13.175	.99	-.3755	.2844

TABLE B2.- Continued

MACH = 1.58 ALPHA =12.91 POINT = 87

PO = 1075.91 PSF P = 260.73 PSF Q = 455.62 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1483	.2340
	2.570	.52	-.1798	
	3.163	.64	-.2359	.2408
	3.855	.78	-.3178	.2468
	4.350	.88	-.3504	.2582
	4.696	.95	-.3444	.2837
	4.893	.99	-.2891	.3115
15.5	2.484	.33	-.1597	
	3.011	.40	-.1769	.1540
	3.538	.47	-.1960	.1572
	4.065	.54	-.2057	.1656
	4.517	.60	-.2165	.1745
	4.968	.66	-.2227	.1829
	5.420	.72	-.3142	.1939
	5.872	.78	-.3653	.2076
	6.474	.86	-.3996	.2334
	6.926	.92	-.4023	.2435
	7.227	.96	-.4002	.2603
	7.453	.99	-.3626	.3195
19.9	2.077	.20		.1482
	3.116	.30	-.1824	.1513
	4.154	.40	-.2169	.1592
	4.570	.44	-.2240	
	4.985	.48	-.2385	.1621
	5.401	.52	-.2441	
	5.816	.56	-.2443	.1714
	6.232	.60	-.2324	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.3339	.1816
	7.062	.68	-.3522	
	7.478	.72	-.3565	.1900
	7.893	.76	-.3634	.1998
	8.309	.80	-.3757	.2123
	8.724	.84	-.3899	.2297
	9.140	.88	-.3921	.2661
	9.555	.92	-.4008	.2551
	9.970	.96	-.4141	.2956
	10.282	.99	-.3971	.3841
24.4	4.575	.34	-.1942	.1324
	5.323	.40	-.2232	.1375
	5.855	.44	-.2425	
	6.388	.48	-.2579	.1311
	6.920	.52	-.2656	
	7.453	.56	-.2887	.1309
	7.985	.60	-.2946	
	8.517	.64	-.3510	.1343
	9.049	.68	-.3679	
	9.582	.72	-.3780	.1442
	10.114	.76	-.3868	.1528
	10.646	.80	-.3878	.1628
	10.179	.84	-.3885	.1739
	11.711	.88	-.3817	.1946
	12.243	.92	-.3934	.2190
	12.776	.96	-.4052	.2487
	13.042	.98	-.4186	.3071
	13.175	.99	-.4056	.3246

TABLE B2.- Continued

MACH = 1.58 ALPHA =13.91 POINT = 88

PO = 1075.85 PSF P = 260.71 PSF Q = 455.59 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1575	.2541
	2.570	.52	-.1885	
	3.163	.64	-.3000	.2625
	3.855	.78	-.3372	.2703
	4.350	.88	-.3703	.2848
	4.696	.95	-.3759	.3127
	4.893	.99	-.3232	.3278
15.5	2.484	.33	-.1669	
	3.011	.40	-.1845	.1741
	3.538	.47	-.2068	.1785
	4.065	.54	-.2183	.1872
	4.517	.60	-.2402	.1951
	4.968	.66	-.3303	.2042
	5.420	.72	-.3606	.2169
	5.872	.78	-.3986	.2306
	6.474	.86	-.4223	.2516
	6.926	.92	-.4243	.2675
	7.227	.96	-.4251	.2920
	7.453	.99	-.3915	.3484
19.9	2.077	.20		.1682
	3.116	.30	-.1902	.1696
	4.154	.40	-.2248	.1785
	4.570	.44	-.2288	
	4.985	.48	-.2559	.1845
	5.401	.52	-.2534	
	5.816	.56	-.2467	.1945
	6.232	.60	-.3568	
19.9	6.647	.64	-.3736	.2044
	7.062	.68	-.3780	
	7.478	.72	-.3832	.2163
	7.893	.76	-.3926	.2242
	8.309	.80	-.4022	.2355
	8.724	.84	-.4109	.2537
	9.140	.88	-.4135	.2957
	9.555	.92	-.4232	.2846
	9.970	.96	-.4374	.3279
	10.282	.99	-.4238	.4149
24.4	4.575	.34	-.2061	.1536
	5.323	.40	-.2340	.1593
	5.855	.44	-.2496	
	6.388	.48	-.2585	.1527
	6.920	.52	-.2781	
	7.453	.56	-.3473	.1533
	7.985	.60	-.3585	
	8.517	.64	-.3876	.1569
	9.049	.68	-.3910	
	9.582	.72	-.3932	.1694
	10.114	.76	-.3994	.1769
	10.646	.80	-.4038	.1885
	10.179	.84	-.4097	.2022
	11.711	.88	-.4031	.2217
	12.243	.92	-.4164	.2501
	12.776	.96	-.4281	.2808
	13.042	.98	-.4439	.3471
	13.175	.99	-.4317	.3614

TABLE B2.- Continued

MACH = 1.58   ALPHA = 5.91   POINT = 90

PO = 1074.04 PSF   P = 260.27 PSF   Q = 454.83 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0675	.1057
	2.570	.52	-.0774	
	3.163	.64	-.0835	.1016
	3.855	.78	-.0714	.0905
	4.350	.88	-.0671	.0772
	4.696	.95	-.0394	.0171
	4.893	.99	.0391	.0001
15.5	2.484	.33	-.0750	
	3.011	.40	-.0869	.0312
	3.538	.47	-.0979	.0352
	4.065	.54	-.0966	.0425
	4.517	.60	-.0903	.0477
	4.968	.66	-.0761	.0535
	5.420	.72	-.0684	.0573
	5.872	.78	-.0773	.0605
	6.474	.86	-.0807	.0607
	6.926	.92	-.0883	.0450
	7.227	.96	-.0841	-.0067
	7.453	.99	-.0152	-.0514
19.9	2.077	.20		.0181
	3.116	.30	-.1143	.0199
	4.154	.40	-.1372	.0280
	4.570	.44	-.1430	
	4.985	.48	-.1459	.0310
	5.401	.52	-.1425	
	5.816	.56	-.1401	.0322
	6.232	.60	-.1367	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1298	.0325
	7.062	.68	-.1210	
	7.478	.72	-.1098	.0252
	7.893	.76	-.0977	.0296
	8.309	.80	-.0861	.0377
	8.724	.84	-.0951	.0473
	9.140	.88	-.0888	.0675
	9.555	.92	-.0994	.0290
	9.970	.96	-.1290	-.0231
	10.282	.99	-.0665	-.0289
24.4	4.575	.34	-.1377	-.0008
	5.323	.40	-.1518	.0017
	5.855	.44	-.1641	
	6.388	.48	-.1750	-.0059
	6.920	.52	-.1772	
	7.453	.56	-.1749	-.0088
	7.985	.60	-.1698	
	8.517	.64	-.1630	-.0124
	9.049	.68	-.1542	
	9.582	.72	-.1432	-.0174
	10.114	.76	-.1289	-.0176
	10.646	.80	-.1193	-.0132
	10.179	.84	-.1069	-.0089
	11.711	.88	-.1040	.0050
	12.243	.92	-.1053	.0103
	12.776	.96	-.1353	-.0285
	13.042	.98	-.1618	-.0580
	13.175	.99	-.0829	-.0870

TABLE B2.- Continued

MACH = 1.58 ALPHA = 7.90 POINT = 91

PO = 1074.01 PSF P = 260.27 PSF Q = 454.81 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0936	.1381
	2.570	.52	-.1111	
	3.163	.64	-.1218	.1390
	3.855	.78	-.1240	.1328
	4.350	.88	-.1380	.1274
	4.696	.95	-.1261	.1188
	4.893	.99	-.0576	.1310
15.5	2.484	.33	-.1017	
	3.011	.40	-.1152	.0621
	3.538	.47	-.1263	.0664
	4.065	.54	-.1296	.0733
	4.517	.60	-.1255	.0812
	4.968	.66	-.1174	.0885
	5.420	.72	-.1179	.0938
	5.872	.78	-.1303	.0995
	6.474	.86	-.1546	.1082
	6.926	.92	-.1916	.1066
	7.227	.96	-.2016	.0966
	7.453	.99	-.1354	.1135
19.9	2.077	.20		.0499
	3.116	.30	-.1336	.0537
	4.154	.40	-.1630	.0639
	4.570	.44	-.1689	
	4.985	.48	-.1749	.0653
	5.401	.52	-.1749	
	5.816	.56	-.1759	.0690
	6.232	.60	-.1745	
19.9	6.647	.64	-.1690	.0727
	7.062	.68	-.1608	
	7.478	.72	-.1511	.0705
	7.893	.76	-.1449	.0752
	8.309	.80	-.1439	.0852
	8.724	.84	-.1744	.0961
	9.140	.88	-.1906	.1264
	9.555	.92	-.2317	.1019
	9.970	.96	-.2493	.1056
	10.282	.99	-.1938	.1404
24.4	4.575	.34	-.1556	.0349
	5.323	.40	-.1772	.0395
	5.855	.44	-.1939	
	6.388	.48	-.2053	.0323
	6.920	.52	-.2064	
	7.453	.56	-.2082	.0292
	7.985	.60	-.2055	
	8.517	.64	-.2004	.0281
	9.049	.68	-.1927	
	9.582	.72	-.1824	.0270
	10.114	.76	-.1658	.0295
	10.646	.80	-.1655	.0370
	10.179	.84	-.1912	.0458
	11.711	.88	-.2240	.0598
	12.243	.92	-.2376	.0724
	12.776	.96	-.2407	.0783
	13.042	.98	-.2450	.0800
	13.175	.99	-.2097	.0815

TABLE B2.- Continued

MACH = 1.58 ALPHA = 8.93 POINT = 92

PO = 1074.16 PSF P = 260.30 PSF Q = 454.87 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1051	.1563
	2.570	.52	-.1255	
	3.163	.64	-.1396	.1573
	3.855	.78	-.1545	.1543
	4.350	.88	-.1783	.1545
	4.696	.95	-.1753	.1676
	4.893	.99	-.1147	.1864
15.5	2.484	.33	-.1166	
	3.011	.40	-.1296	.0794
	3.538	.47	-.1415	.0820
	4.065	.54	-.1454	.0913
	4.517	.60	-.1431	.0995
	4.968	.66	-.1398	.1072
	5.420	.72	-.1427	.1139
	5.872	.78	-.1610	.1216
	6.474	.86	-.2071	.1324
	6.926	.92	-.2499	.1371
	7.227	.96	-.2617	.1385
	7.453	.99	-.1919	.1796
19.9	2.077	.20		.0684
	3.116	.30	-.1441	.0735
	4.154	.40	-.1749	.0821
	4.570	.44	-.1829	
	4.985	.48	-.1902	.0838
	5.401	.52	-.1927	
	5.816	.56	-.1935	.0896
	6.232	.60	-.1929	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1876	.0927
	7.062	.68	-.1811	
	7.478	.72	-.1747	.0958
	7.893	.76	-.1715	.1012
	8.309	.80	-.1810	.1102
	8.724	.84	-.2498	.1251
	9.140	.88	-.2629	.1548
	9.555	.92	-.2830	.1390
	9.970	.96	-.2964	.1511
	10.282	.99	-.2489	.2032
24.4	4.575	.34	-.1607	.0528
	5.323	.40	-.1906	.0581
	5.855	.44	-.2075	
	6.388	.48	-.2178	.0510
	6.920	.52	-.2212	
	7.453	.56	-.2255	.0505
	7.985	.60	-.2229	
	8.517	.64	-.2182	.0486
	9.049	.68	-.2088	
	9.582	.72	-.1983	.0491
	10.114	.76	-.1958	.0538
	10.646	.80	-.2263	.0622
	10.179	.84	-.2655	.0730
	11.711	.88	-.2744	.0902
	12.243	.92	-.2752	.1021
	12.776	.96	-.2842	.1178
	13.042	.98	-.2882	.1327
	13.175	.99	-.2619	.1465

TABLE B2.- Continued

MACH = 1.62 ALPHA = 5.97 POINT = 93

PO = 1086.29 PSF P = 248.10 PSF Q = 455.77 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0650	.1092
	2.570	.52	-.0787	
	3.163	.64	-.0824	.1070
	3.855	.78	-.0687	.0926
	4.350	.88	-.0666	.0770
	4.696	.95	-.0355	.0112
	4.893	.99	.0460	-.0099
15.5	2.484	.33	-.0787	
	3.011	.40	-.0864	.0342
	3.538	.47	-.0916	.0379
	4.065	.54	-.0928	.0468
	4.517	.60	-.0875	.0550
	4.968	.66	-.0745	.0583
	5.420	.72	-.0699	.0598
	5.872	.78	-.0756	.0625
	6.474	.86	-.0735	.0616
	6.926	.92	-.0799	.0478
	7.227	.96	-.0745	-.0081
	7.453	.99	-.0049	-.0531
19.9	2.077	.20		.0191
	3.116	.30	-.1103	.0228
	4.154	.40	-.1297	.0292
	4.570	.44	-.1342	
	4.985	.48	-.1411	.0309
	5.401	.52	-.1421	
	5.816	.56	-.1399	.0358
	6.232	.60	-.1331	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1259	.0358
	7.062	.68	-.1171	
	7.478	.72	-.1048	.0327
	7.893	.76	-.0920	.0356
	8.309	.80	-.0846	.0436
	8.724	.84	-.0934	.0521
	9.140	.88	-.0845	.0737
	9.555	.92	-.0946	.0343
	9.970	.96	-.1150	-.0265
	10.282	.99	-.0404	-.0304
24.4	4.575	.34	-.1357	.0044
	5.323	.40	-.1510	.0069
	5.855	.44	-.1629	
	6.388	.48	-.1698	-.0007
	6.920	.52	-.1748	
	7.453	.56	-.1755	-.0029
	7.985	.60	-.1683	
	8.517	.64	-.1601	-.0083
	9.049	.68	-.1507	
	9.582	.72	-.1392	-.0114
	10.114	.76	-.1253	-.0148
	10.646	.80	-.1142	-.0133
	10.179	.84	-.1052	-.0090
	11.711	.88	-.1006	.0060
	12.243	.92	-.1005	.0129
	12.776	.96	-.1357	-.0246
	13.042	.98	-.1571	-.0591
	13.175	.99	-.0760	-.0923

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE B2.- Continued

MACH = 1.62 ALPHA = 7.96 POINT = 94

PO = 1086.12 PSF P = 248.06 PSF Q = 455.70 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0910	.1434
	2.570	.52	-.1101	
	3.163	.64	-.1187	.1429
	3.855	.78	-.1204	.1326
	4.350	.88	-.1334	.1268
	4.696	.95	-.1209	.1127
	4.893	.99	-.0469	.1273
15.5	2.484	.33	-.0989	
	3.011	.40	-.1103	.0651
	3.538	.47	-.1251	.0690
	4.065	.54	-.1287	.0785
	4.517	.60	-.1245	.0864
	4.968	.66	-.1169	.0915
	5.420	.72	-.1197	.0978
	5.872	.78	-.1282	.1030
	6.474	.86	-.1494	.1112
	6.926	.92	-.1821	.1069
	7.227	.96	-.1881	.0951
	7.453	.99	-.1196	.1062
19.9	2.077	.20		.0524
	3.116	.30	-.1324	.0558
	4.154	.40	-.1563	.0630
	4.570	.44	-.1655	
	4.985	.48	-.1731	.0692
	5.401	.52	-.1729	
	5.816	.56	-.1721	.0710
	6.232	.60	-.1697	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1646	.0757
	7.062	.68	-.1568	
	7.478	.72	-.1484	.0748
	7.893	.76	-.1444	.0794
	8.309	.80	-.1440	.0895
	8.724	.84	-.1763	.1028
	9.140	.88	-.1856	.1294
	9.555	.92	-.2156	.1047
	9.970	.96	-.2254	.1068
	10.282	.99	-.1668	.1465
24.4	4.575	.34	-.1555	.0396
	5.323	.40	-.1760	.0418
	5.855	.44	-.1891	
	6.388	.48	-.2019	.0344
	6.920	.52	-.2080	
	7.453	.56	-.2061	.0332
	7.985	.60	-.2020	
	8.517	.64	-.1959	.0301
	9.049	.68	-.1881	
	9.582	.72	-.1791	.0294
	10.114	.76	-.1682	.0313
	10.646	.80	-.1682	.0389
	10.179	.84	-.1905	.0442
	11.711	.88	-.2108	.0584
	12.243	.92	-.2241	.0731
	12.776	.96	-.2265	.0748
	13.042	.98	-.2254	.0753
	13.175	.99	-.1883	.0770

TABLE B2.- Continued

MACH = 1.62 ALPHA = 8.97 POINT = 95

PO = 1086.15 PSF P = 248.07 PSF Q = 455.72 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1031	.1625
	2.570	.52	-.1250	
	3.163	.64	-.1391	.1615
	3.855	.78	-.1527	.1554
	4.350	.88	-.1747	.1529
	4.696	.95	-.1640	.1595
	4.893	.99	-.0958	.1798
15.5	2.484	.33	-.1087	
	3.011	.40	-.1234	.0813
	3.538	.47	-.1399	.0859
	4.065	.54	-.1455	.0953
	4.517	.60	-.1434	.1026
	4.968	.66	-.1378	.1089
	5.420	.72	-.1427	.1171
	5.872	.78	-.1586	.1245
	6.474	.86	-.2035	.1354
	6.926	.92	-.2355	.1383
	7.227	.96	-.2440	.1355
	7.453	.99	-.1701	.1702
19.9	2.077	.20		.0707
	3.116	.30	-.1419	.0737
	4.154	.40	-.1692	.0814
	4.570	.44	-.1791	
	4.985	.48	-.1851	.0890
	5.401	.52	-.1855	
	5.816	.56	-.1874	.0915
	6.232	.60	-.1863	
19.9	6.647	.64	-.1830	.0959
	7.062	.68	-.1754	
	7.478	.72	-.1721	.0980
	7.893	.76	-.1691	.1022
	8.309	.80	-.1888	.1134
	8.724	.84	-.2395	.1281
	9.140	.88	-.2457	.1585
	9.555	.92	-.2582	.1397
	9.970	.96	-.2676	.1550
	10.282	.99	-.2228	.2087
24.4	4.575	.34	-.1612	.0581
	5.323	.40	-.1869	.0615
	5.855	.44	-.2016	
	6.388	.48	-.2164	.0537
	6.920	.52	-.2209	
	7.453	.56	-.2205	.0524
	7.985	.60	-.2186	
	8.517	.64	-.2129	.0496
	9.049	.68	-.2063	
	9.582	.72	-.1972	.0510
	10.114	.76	-.2076	.0548
	10.646	.80	-.2265	.0627
	10.179	.84	-.2533	.0731
	11.711	.88	-.2550	.0887
	12.243	.92	-.2608	.1027
	12.776	.96	-.2627	.1122
	13.042	.98	-.2639	.1281
	13.175	.99	-.2374	.1406

TABLE B2.- Continued

MACH = 1.62 ALPHA = 9.93 POINT = 96

PO = 1086.38 PSF P = 248.12 PSF Q = 455.81 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1144	.1813
	2.570	.52	-.1383	
	3.163	.64	-.1563	.1789
	3.855	.78	-.1834	.1767
	4.350	.88	-.2152	.1773
	4.696	.95	-.2141	.1990
	4.893	.99	-.1471	.2244
15.5	2.484	.33	-.1206	
	3.011	.40	-.1367	.0986
	3.538	.47	-.1532	.1019
	4.065	.54	-.1612	.1122
	4.517	.60	-.1597	.1192
	4.968	.66	-.1566	.1267
	5.420	.72	-.1662	.1361
	5.872	.78	-.1970	.1450
	6.474	.86	-.2618	.1593
	6.926	.92	-.2853	.1657
	7.227	.96	-.2704	.1688
	7.453	.99	-.2170	.2170
19.9	2.077	.20		.0876
	3.116	.30	-.1497	.0920
	4.154	.40	-.1802	.1013
	4.570	.44	-.1894	
	4.985	.48	-.1955	.1066
	5.401	.52	-.1996	
	5.816	.56	-.2017	.1143
	6.232	.60	-.2011	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1972	.1153
	7.062	.68	-.1925	
	7.478	.72	-.1942	.1180
	7.893	.76	-.2216	.1249
	8.309	.80	-.2529	.1354
	8.724	.84	-.2815	.1520
	9.140	.88	-.2798	.1859
	9.555	.92	-.2914	.1712
	9.970	.96	-.3037	.1947
	10.282	.99	-.2683	.2592
24.4	4.575	.34	-.1630	.0757
	5.323	.40	-.1968	.0814
	5.855	.44	-.2142	
	6.388	.48	-.2287	.0740
	6.920	.52	-.2326	
	7.453	.56	-.2349	.0717
	7.985	.60	-.2321	
	8.517	.64	-.2271	.0706
	9.049	.68	-.2208	
	9.582	.72	-.2249	.0732
	10.114	.76	-.2645	.0771
	10.646	.80	-.2819	.0865
	10.179	.84	-.2911	.0965
	11.711	.88	-.2862	.1158
	12.243	.92	-.2916	.1329
	12.776	.96	-.2957	.1513
	13.042	.98	-.3001	.1768
	13.175	.99	-.2799	.1952

TABLE B2.- Continued

MACH = 1.62   ALPHA =10.95   POINT = 97

PO = 1086.38 PSF   P = 248.12 PSF   Q = 455.81 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1251	.2013
	2.570	.52	-.1519	
	3.163	.64	-.1777	.1990
	3.855	.78	-.2243	.2002
	4.350	.88	-.2566	.2026
	4.696	.95	-.2631	.2322
	4.893	.99	-.1921	.2618
15.5	2.484	.33	-.1351	
	3.011	.40	-.1502	.1160
	3.538	.47	-.1674	.1211
	4.065	.54	-.1764	.1286
	4.517	.60	-.1764	.1370
	4.968	.66	-.1769	.1466
	5.420	.72	-.1978	.1552
	5.872	.78	-.2501	.1641
	6.474	.86	-.3135	.1818
	6.926	.92	-.3172	.1943
	7.227	.96	-.3113	.2029
	7.453	.99	-.2615	.2638
19.9	2.077	.20		.1072
	3.116	.30	-.1577	.1102
	4.154	.40	-.1907	.1218
	4.570	.44	-.1990	
	4.985	.48	-.2078	.1264
	5.401	.52	-.2131	
	5.816	.56	-.2173	.1349
	6.232	.60	-.2168	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.2111	.1391
	7.062	.68	-.2203	
	7.478	.72	-.2590	.1418
	7.893	.76	-.2869	.1494
	8.309	.80	-.2984	.1600
	8.724	.84	-.3107	.1787
	9.140	.88	-.3130	.2159
	9.555	.92	-.3248	.2050
	9.970	.96	-.3341	.2314
	10.282	.99	-.3047	.3081
24.4	4.575	.34	-.1596	.0920
	5.323	.40	-.2059	.0979
	5.855	.44	-.2258	
	6.388	.48	-.2378	.0922
	6.920	.52	-.2453	
	7.453	.56	-.2477	.0892
	7.985	.60	-.2447	
	8.517	.64	-.2411	.0889
	9.049	.68	-.2544	
	9.582	.72	-.3038	.0925
	10.114	.76	-.3137	.0981
	10.646	.80	-.3169	.1102
	10.179	.84	-.3212	.1210
	11.711	.88	-.3152	.1413
	12.243	.92	-.3178	.1593
	12.776	.96	-.3264	.1859
	13.042	.98	-.3334	.2208
	13.175	.99	-.3172	.2440

TABLE B2.- Continued

MACH = 1.62 ALPHA =11.93 POINT = 98

PO = 1086.85 PSF P = 248.22 PSF Q = 456.01 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1366	.2179
	2.570	.52	-.1664	
	3.163	.64	-.2014	.2200
	3.855	.78	-.2636	.2224
	4.350	.88	-.3010	.2290
	4.696	.95	-.2898	.2572
	4.893	.99	-.2327	.2883
15.5	2.484	.33	-.1477	
	3.011	.40	-.1626	.1342
	3.538	.47	-.1793	.1371
	4.065	.54	-.1899	.1465
	4.517	.60	-.1917	.1545
	4.968	.66	-.1997	.1653
	5.420	.72	-.2611	.1749
	5.872	.78	-.3095	.1845
	6.474	.86	-.3473	.2055
	6.926	.92	-.3455	.2221
	7.227	.96	-.3441	.2404
	7.453	.99	-.3012	.3013
19.9	2.077	.20		.1263
	3.116	.30	-.1678	.1306
	4.154	.40	-.1996	.1396
	4.570	.44	-.2094	
	4.985	.48	-.2212	.1457
	5.401	.52	-.2261	
	5.816	.56	-.2291	.1553
	6.232	.60	-.2215	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.2582	.1630
	7.062	.68	-.2994	
	7.478	.72	-.3098	.1671
	7.893	.76	-.3163	.1725
	8.309	.80	-.3263	.1843
	8.724	.84	-.3379	.2018
	9.140	.88	-.3414	.2446
	9.555	.92	-.3524	.2322
	9.970	.96	-.3603	.2658
	10.282	.99	-.3356	.3490
24.4	4.575	.34	-.1692	.1118
	5.323	.40	-.2164	.1185
	5.855	.44	-.2351	
	6.388	.48	-.2464	.1110
	6.920	.52	-.2536	
	7.453	.56	-.2612	.1123
	7.985	.60	-.2602	
	8.517	.64	-.2776	.1125
	9.049	.68	-.3266	
	9.582	.72	-.3397	.1182
	10.114	.76	-.3413	.1226
	10.646	.80	-.3425	.1356
	10.179	.84	-.3465	.1492
	11.711	.88	-.3368	.1660
	12.243	.92	-.3425	.1914
	12.776	.96	-.3536	.2195
	13.042	.98	-.3631	.2638
	13.175	.99	-.3483	.2866

TABLE B2.- Continued

MACH = 1.62 ALPHA =12.95 POINT = 99

PO = 1086.75 PSF P = 248.20 PSF Q = 455.97 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1476	.2378
	2.570	.52	-.1795	
	3.163	.64	-.2443	.2418
	3.855	.78	-.3002	.2452
	4.350	.88	-.3326	.2552
	4.696	.95	-.3224	.2824
	4.893	.99	-.2692	.3122
15.5	2.484	.33	-.1560	
	3.011	.40	-.1731	.1531
	3.538	.47	-.1908	.1560
	4.065	.54	-.2021	.1654
	4.517	.60	-.2139	.1762
	4.968	.66	-.2562	.1859
	5.420	.72	-.3150	.1966
	5.872	.78	-.3495	.2070
	6.474	.86	-.3742	.2305
	6.926	.92	-.3768	.2517
	7.227	.96	-.3750	.2714
	7.453	.99	-.3373	.3253
19.9	2.077	.20		.1471
	3.116	.30	-.1790	.1535
	4.154	.40	-.2122	.1622
	4.570	.44	-.2191	
	4.985	.48	-.2366	.1678
	5.401	.52	-.2398	
	5.816	.56	-.2378	.1764
	6.232	.60	-.2691	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.3261	.1843
	7.062	.68	-.3333	
	7.478	.72	-.3385	.1923
	7.893	.76	-.3477	.1990
	8.309	.80	-.3567	.2114
	8.724	.84	-.3670	.2319
	9.140	.88	-.3696	.2714
	9.555	.92	-.3769	.2578
	9.970	.96	-.3865	.2971
	10.282	.99	-.3676	.3859
24.4	4.575	.34	-.1946	.1331
	5.323	.40	-.2266	.1392
	5.855	.44	-.2415	
	6.388	.48	-.2520	.1325
	6.920	.52	-.2605	
	7.453	.56	-.2902	.1349
	7.985	.60	-.3036	
	8.517	.64	-.3460	.1357
	9.049	.68	-.3535	
	9.582	.72	-.3611	.1429
	10.114	.76	-.3664	.1487
	10.646	.80	-.3674	.1600
	10.179	.84	-.3695	.1746
	11.711	.88	-.3584	.1944
	12.243	.92	-.3685	.2214
	12.776	.96	-.3797	.2518
	13.042	.98	-.3919	.3074
	13.175	.99	-.3782	.3256

TABLE B2.- Continued

MACH = 1.62 ALPHA =13.95 POINT = 100

PO = 1086.63 PSF P = 248.18 PSF Q = 455.92 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1562	.2603
	2.570	.52	-.1872	
	3.163	.64	-.2960	.2634
	3.855	.78	-.3252	.2676
	4.350	.88	-.3561	.2618
	4.696	.95	-.3536	.3097
	4.893	.99	-.2972	.3296
15.5	2.484	.33	-.1619	
	3.011	.40	-.1812	.1726
	3.538	.47	-.1986	.1748
	4.065	.54	-.2146	.1850
	4.517	.60	-.2452	.1949
	4.968	.66	-.3319	.2039
	5.420	.72	-.3548	.2163
	5.872	.78	-.3767	.2287
	6.474	.86	-.3971	.2570
	6.926	.92	-.4001	.2748
	7.227	.96	-.3987	.2917
	7.453	.99	-.3632	.3466
19.9	2.077	.20		.1663
	3.116	.30	-.1872	.1750
	4.154	.40	-.2208	.1827
	4.570	.44	-.2243	
	4.985	.48	-.2527	.1875
	5.401	.52	-.2489	
	5.816	.56	-.2446	.1962
	6.232	.60	-.3516	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.3568	.2051
	7.062	.68	-.3603	
	7.478	.72	-.3681	.2149
	7.893	.76	-.3772	.2257
	8.309	.80	-.3813	.2397
	8.724	.84	-.3883	.2603
	9.140	.88	-.3894	.2964
	9.555	.92	-.3953	.2856
	9.970	.96	-.4074	.3271
	10.282	.99	-.3908	.4139
24.4	4.575	.34	-.2130	.1548
	5.323	.40	-.2334	.1589
	5.855	.44	-.2460	
	6.388	.48	-.2519	.1519
	6.920	.52	-.3053	
	7.453	.56	-.3593	.1542
	7.985	.60	-.3578	
	8.517	.64	-.3642	.1579
	9.049	.68	-.3651	
	9.582	.72	-.3694	.1660
	10.114	.76	-.3772	.1744
	10.646	.80	-.3809	.1872
	10.179	.84	-.3858	.1998
	11.711	.88	-.3775	.2218
	12.243	.92	-.3898	.2501
	12.776	.96	-.4003	.2821
	13.042	.98	-.4139	.3463
	13.175	.99	-.4004	.3619

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE B2.- Continued

MACH = 1.62 ALPHA = 5.98 POINT = 101

PO = 1086.63 PSF P = 248.17 PSF Q = 455.91 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0649	.1100
	2.570	.52	-.0785	
	3.163	.64	-.0817	.1076
	3.855	.78	-.0693	.0928
	4.350	.88	-.0650	.0766
	4.696	.95	-.0371	.0134
	4.893	.99	.0479	-.0051
15.5	2.484	.33	-.0794	
	3.011	.40	-.0861	.0351
	3.538	.47	-.0925	.0385
	4.065	.54	-.0946	.0479
	4.517	.60	-.0880	.0557
	4.968	.66	-.0754	.0598
	5.420	.72	-.0720	.0611
	5.872	.78	-.0766	.0627
	6.474	.86	-.0746	.0619
	6.926	.92	-.0815	.0484
	7.227	.96	-.0756	-.0059
	7.453	.99	-.0045	-.0514
19.9	2.077	.20		.0197
	3.116	.30	-.1108	.0239
	4.154	.40	-.1302	.0296
	4.570	.44	-.1348	
	4.985	.48	-.1419	.0320
	5.401	.52	-.1424	
	5.816	.56	-.1406	.0357
	6.232	.60	-.1343	
19.9	6.647	.64	-.1275	.0361
	7.062	.68	-.1169	
	7.478	.72	-.1053	.0329
	7.893	.76	-.0930	.0369
	8.309	.80	-.0864	.0443
	8.724	.84	-.0942	.0521
	9.140	.88	-.0851	.0729
	9.555	.92	-.0951	.0352
	9.970	.96	-.1163	-.0225
	10.282	.99	-.0424	-.0246
24.4	4.575	.34	-.1358	.0053
	5.323	.40	-.1511	.0079
	5.855	.44	-.1632	
	6.388	.48	-.1699	-.0001
	6.920	.52	-.1750	
	7.453	.56	-.1754	-.0015
	7.985	.60	-.1683	
	8.517	.64	-.1604	-.0079
	9.049	.68	-.1512	
	9.582	.72	-.1386	-.0106
	10.114	.76	-.1248	-.0152
	10.646	.80	-.1139	-.0117
	10.179	.84	-.1065	-.0080
	11.711	.88	-.1011	.0063
	12.243	.92	-.1012	.0136
	12.776	.96	-.1365	-.0216
	13.042	.98	-.1579	-.0543
	13.175	.99	-.0777	-.0816

TABLE B2.- Continued

MACH = 1.62 ALPHA = 5.98 POINT = 102

PO = 1087.08 PSF P = 248.28 PSF Q = 456.11 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0654	.1107
	2.570	.52	-.0782	
	3.163	.64	-.0826	.1067
	3.855	.78	-.0684	.0922
	4.350	.88	-.0647	.0778
	4.696	.95	-.0346	.0140
	4.893	.99	.0454	-.0058
15.5	2.484	.33	-.0794	
	3.011	.40	-.0869	.0344
	3.538	.47	-.0921	.0380
	4.065	.54	-.0941	.0474
	4.517	.60	-.0879	.0552
	4.968	.66	-.0752	.0588
	5.420	.72	-.0705	.0607
	5.872	.78	-.0763	.0621
	6.474	.86	-.0748	.0623
	6.926	.92	-.0821	.0493
	7.227	.96	-.0761	-.0060
	7.453	.99	-.0050	-.0503
19.9	2.077	.20		.0190
	3.116	.30	-.1119	.0237
	4.154	.40	-.1310	.0297
	4.570	.44	-.1358	
	4.985	.48	-.1428	.0314
	5.401	.52	-.1437	
	5.816	.56	-.1416	.0356
	6.232	.60	-.1356	
19.9	6.647	.64	-.1283	.0373
	7.062	.68	-.1183	
	7.478	.72	-.1062	.0339
	7.893	.76	-.0948	.0372
	8.309	.80	-.0872	.0438
	8.724	.84	-.0946	.0529
	9.140	.88	-.0852	.0734
	9.555	.92	-.0954	.0358
	9.970	.96	-.1163	-.0220
	10.282	.99	-.0427	-.0248
24.4	4.575	.34	-.1362	.0046
	5.323	.40	-.1516	.0076
	5.855	.44	-.1635	
	6.388	.48	-.1705	-.0006
	6.920	.52	-.1755	
	7.453	.56	-.1763	-.0019
	7.985	.60	-.1685	
	8.517	.64	-.1611	-.0073
	9.049	.68	-.1519	
	9.582	.72	-.1392	-.0105
	10.114	.76	-.1256	-.0153
	10.646	.80	-.1149	-.0115
	10.179	.84	-.1070	-.0085
	11.711	.88	-.1011	.0059
	12.243	.92	-.1009	.0140
	12.776	.96	-.1366	-.0212
	13.042	.98	-.1582	-.0542
	13.175	.99	-.0782	-.0832

TABLE B2.- Continued

MACH = 1.66 ALPHA = 5.99 POINT = 103

PO = 1098.56 PSF P = 236.36 PSF Q = 455.91 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0673	.1080
	2.570	.52	-.0749	
	3.163	.64	-.0765	.1029
	3.855	.78	-.0661	.0913
	4.350	.88	-.0617	.0704
	4.696	.95	-.0307	.0018
	4.893	.99	.0552	-.0147
15.5	2.484	.33	-.0794	
	3.011	.40	-.0891	.0340
	3.538	.47	-.0945	.0386
	4.065	.54	-.0926	.0485
	4.517	.60	-.0872	.0534
	4.968	.66	-.0755	.0587
	5.420	.72	-.0680	.0635
	5.872	.78	-.0710	.0621
	6.474	.86	-.0698	.0578
	6.926	.92	-.0762	.0436
	7.227	.96	-.0666	-.0235
	7.453	.99	.0064	-.0741
19.9	2.077	.20		.0223
	3.116	.30	-.1062	.0201
	4.154	.40	-.1277	.0259
	4.570	.44	-.1333	
	4.985	.48	-.1374	.0304
	5.401	.52	-.1352	
	5.816	.56	-.1348	.0356
	6.232	.60	-.1337	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1272	.0349
	7.062	.68	-.1173	
	7.478	.72	-.1046	.0337
	7.893	.76	-.0906	.0385
	8.309	.80	-.0824	.0460
	8.724	.84	-.0886	.0561
	9.140	.88	-.0790	.0773
	9.555	.92	-.0883	.0382
	9.970	.96	-.1031	-.0286
	10.282	.99	-.0248	-.0295
24.4	4.575	.34	-.1355	.0076
	5.323	.40	-.1496	.0123
	5.855	.44	-.1597	
	6.388	.48	-.1667	.0047
	6.920	.52	-.1693	
	7.453	.56	-.1709	.0036
	7.985	.60	-.1675	
	8.517	.64	-.1579	-.0060
	9.049	.68	-.1476	
	9.582	.72	-.1384	-.0100
	10.114	.76	-.1245	-.0101
	10.646	.80	-.1130	-.0071
	10.179	.84	-.1038	-.0029
	11.711	.88	-.0927	.0177
	12.243	.92	-.0897	.0172
	12.776	.96	-.1183	-.0225
	13.042	.98	-.1394	-.0551
	13.175	.99	-.0617	-.0841

ORIGINAL PAGE IS OF POOR QUALITY

TABLE B2.- Continued

MACH = 1.66 ALPHA = 7.99 POINT = 104

PO = 1098.44 PSF P = 236.33 PSF Q = 455.86 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0934	.1428
	2.570	.52	-.1094	
	3.163	.64	-.1155	.1423
	3.855	.78	-.1177	.1330
	4.350	.88	-.1272	.1216
	4.696	.95	-.1080	.0977
	4.893	.99	-.0327	.1166
15.5	2.484	.33	-.1034	
	3.011	.40	-.1137	.0650
	3.538	.47	-.1211	.0701
	4.065	.54	-.1257	.0804
	4.517	.60	-.1259	.0872
	4.968	.66	-.1157	.0934
	5.420	.72	-.1155	.0981
	5.872	.78	-.1252	.1001
	6.474	.86	-.1478	.1078
	6.926	.92	-.1718	.1032
	7.227	.96	-.1720	.0881
	7.453	.99	-.1008	.0911
19.9	2.077	.20		.0534
	3.116	.30	-.1292	.0532
	4.154	.40	-.1534	.0594
	4.570	.44	-.1607	
	4.985	.48	-.1672	.0659
	5.401	.52	-.1694	
	5.816	.56	-.1719	.0724
	6.232	.60	-.1685	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1657	.0729
	7.062	.68	-.1571	
	7.478	.72	-.1476	.0739
	7.893	.76	-.1398	.0810
	8.309	.80	-.1396	.0919
	8.724	.84	-.1722	.1054
	9.140	.88	-.1765	.1331
	9.555	.92	-.1980	.1066
	9.970	.96	-.2051	.1024
	10.282	.99	-.1373	.1367
24.4	4.575	.34	-.1552	.0411
	5.323	.40	-.1749	.0464
	5.855	.44	-.1861	
	6.388	.48	-.1958	.0397
	6.920	.52	-.2020	
	7.453	.56	-.2055	.0400
	7.985	.60	-.1992	
	8.517	.64	-.1915	.0329
	9.049	.68	-.1866	
	9.582	.72	-.1772	.0323
	10.114	.76	-.1671	.0341
	10.646	.80	-.1680	.0409
	10.179	.84	-.1855	.0475
	11.711	.88	-.1940	.0627
	12.243	.92	-.2035	.0762
	12.776	.96	-.2088	.0800
	13.042	.98	-.2135	.0818
	13.175	.99	-.1734	.0758

TABLE B2.- Continued

MACH = 1.66 ALPHA = 9.01 POINT = 105

PO = 1098.62 PSF P = 236.37 PSF Q = 455.94 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1033	.1605
	2.570	.52	-.1241	
	3.163	.64	-.1362	.1624
	3.855	.78	-.1470	.1541
	4.350	.88	-.1672	.1499
	4.696	.95	-.1508	.1454
	4.893	.99	-.0811	.1664
15.5	2.484	.33	-.1135	
	3.011	.40	-.1235	.0832
	3.538	.47	-.1343	.0868
	4.065	.54	-.1439	.0967
	4.517	.60	-.1452	.1049
	4.968	.66	-.1377	.1117
	5.420	.72	-.1399	.1157
	5.872	.78	-.1565	.1213
	6.474	.86	-.1982	.1322
	6.926	.92	-.2199	.1335
	7.227	.96	-.2249	.1288
	7.453	.99	-.1485	.1573
19.9	2.077	.20		.0694
	3.116	.30	-.1373	.0720
	4.154	.40	-.1626	.0770
	4.570	.44	-.1709	
	4.985	.48	-.1804	.0851
	5.401	.52	-.1844	
	5.816	.56	-.1852	.0921
	6.232	.60	-.1838	
19.9	6.647	.64	-.1821	.0950
	7.062	.68	-.1755	
	7.478	.72	-.1676	.0966
	7.893	.76	-.1633	.1044
	8.309	.80	-.1850	.1159
	8.724	.84	-.2245	.1311
	9.140	.88	-.2277	.1597
	9.555	.92	-.2372	.1409
	9.970	.96	-.2405	.1491
	10.282	.99	-.1887	.2028
24.4	4.575	.34	-.1596	.0570
	5.323	.40	-.1856	.0621
	5.855	.44	-.1982	
	6.388	.48	-.2095	.0550
	6.920	.52	-.2189	
	7.453	.56	-.2210	.0553
	7.985	.60	-.2145	
	8.517	.64	-.2094	.0529
	9.049	.68	-.2044	
	9.582	.72	-.1973	.0512
	10.114	.76	-.2069	.0547
	10.646	.80	-.2215	.0629
	10.179	.84	-.2368	.0715
	11.711	.88	-.2350	.0872
	12.243	.92	-.2410	.1031
	12.776	.96	-.2482	.1152
	13.042	.98	-.2469	.1317
	13.175	.99	-.2168	.1370

TABLE B2.- Continued

MACH = 1.66 ALPHA = 9.99 POINT = 106

PO = 1098.72 PSF P = 236.39 PSF Q = 455.98 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1149	.1774
	2.570	.52	-.1399	
	3.163	.64	-.1533	.1818
	3.855	.78	-.1784	.1752
	4.350	.88	-.2040	.1746
	4.696	.95	-.1982	.1915
	4.893	.99	-.1280	.2157
15.5	2.484	.33	-.1228	
	3.011	.40	-.1347	.0998
	3.538	.47	-.1498	.1039
	4.065	.54	-.1612	.1135
	4.517	.60	-.1613	.1213
	4.968	.66	-.1595	.1283
	5.420	.72	-.1643	.1344
	5.872	.78	-.1943	.1412
	6.474	.86	-.2512	.1550
	6.926	.92	-.2679	.1614
	7.227	.96	-.2510	.1626
	7.453	.99	-.1964	.2076
19.9	2.077	.20		.0858
	3.116	.30	-.1489	.0911
	4.154	.40	-.1739	.0944
	4.570	.44	-.1845	
	4.985	.48	-.1947	.1031
	5.401	.52	-.1987	
	5.816	.56	-.2000	.1086
	6.232	.60	-.2000	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1986	.1149
	7.062	.68	-.1941	
	7.478	.72	-.1972	.1184
	7.893	.76	-.2242	.1263
	8.309	.80	-.2472	.1382
	8.724	.84	-.2645	.1549
	9.140	.88	-.2610	.1874
	9.555	.92	-.2697	.1712
	9.970	.96	-.2765	.1885
	10.282	.99	-.2369	.2575
24.4	4.575	.34	-.1613	.0776
	5.323	.40	-.1956	.0819
	5.855	.44	-.2087	
	6.388	.48	-.2232	.0739
	6.920	.52	-.2327	
	7.453	.56	-.2319	.0749
	7.985	.60	-.2284	
	8.517	.64	-.2247	.0741
	9.049	.68	-.2220	
	9.582	.72	-.2369	.0756
	10.114	.76	-.2608	.0780
	10.646	.80	-.2695	.0876
	10.179	.84	-.2736	.0970
	11.711	.88	-.2651	.1140
	12.243	.92	-.2738	.1336
	12.776	.96	-.2776	.1511
	13.042	.98	-.2773	.1783
	13.175	.99	-.2553	.1927

TABLE B2.- Continued

MACH = 1.66 ALPHA =10.97 POINT = 107

PO = 1098.95 PSF P = 236.44 PSF Q = 456.07 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1247	.1974
	2.570	.52	-.1541	
	3.163	.64	-.1728	.2007
	3.855	.78	-.2164	.1994
	4.350	.88	-.2406	.2007
	4.696	.95	-.2409	.2295
	4.893	.99	-.1674	.2551
15.5	2.484	.33	-.1317	
	3.011	.40	-.1436	.1168
	3.538	.47	-.1634	.1215
	4.065	.54	-.1751	.1323
	4.517	.60	-.1781	.1398
	4.968	.66	-.1806	.1466
	5.420	.72	-.1995	.1536
	5.872	.78	-.2506	.1629
	6.474	.86	-.2953	.1780
	6.926	.92	-.2956	.1878
	7.227	.96	-.2866	.1929
	7.453	.99	-.2353	.2485
19.9	2.077	.20		.1040
	3.116	.30	-.1586	.1100
	4.154	.40	-.1864	.1162
	4.570	.44	-.1979	
	4.985	.48	-.2076	.1229
	5.401	.52	-.2104	
	5.816	.56	-.2128	.1277
	6.232	.60	-.2123	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.2145	.1354
	7.062	.68	-.2310	
	7.478	.72	-.2567	.1404
	7.893	.76	-.2742	.1494
	8.309	.80	-.2823	.1622
	8.724	.84	-.2914	.1797
	9.140	.88	-.2913	.2162
	9.555	.92	-.2987	.2014
	9.970	.96	-.3062	.2293
	10.282	.99	-.2776	.3069
24.4	4.575	.34	-.1610	.0993
	5.323	.40	-.2038	.1027
	5.855	.44	-.2197	
	6.388	.48	-.2358	.0951
	6.920	.52	-.2439	
	7.453	.56	-.2433	.0943
	7.985	.60	-.2404	
	8.517	.64	-.2419	.0959
	9.049	.68	-.2643	
	9.582	.72	-.2940	.1002
	10.114	.76	-.2975	.1049
	10.646	.80	-.2973	.1113
	10.179	.84	-.2990	.1224
	11.711	.88	-.2939	.1421
	12.243	.92	-.3010	.1629
	12.776	.96	-.3035	.1848
	13.042	.98	-.3085	.2237
	13.175	.99	-.2912	.2419

TABLE B2.- Continued

MACH = 1.66 ALPHA =11.98 POINT = 108

PO = 1098.67 PSF P = 236.42 PSF Q = 456.04 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1347	.2172
	2.570	.52	-.1683	
	3.163	.64	-.2048	.2214
	3.855	.78	-.2547	.2223
	4.350	.88	-.2860	.2276
	4.696	.95	-.2673	.2541
	4.893	.99	-.2088	.2874
15.5	2.484	.33	-.1394	
	3.011	.40	-.1564	.1351
	3.538	.47	-.1743	.1392
	4.065	.54	-.1866	.1497
	4.517	.60	-.1942	.1577
	4.968	.66	-.2094	.1664
	5.420	.72	-.2561	.1748
	5.872	.78	-.2970	.1845
	6.474	.86	-.3280	.2013
	6.926	.92	-.3238	.2162
	7.227	.96	-.3195	.2273
	7.453	.99	-.2726	.2865
19.9	2.077	.20		.1219
	3.116	.30	-.1664	.1280
	4.154	.40	-.1982	.1399
	4.570	.44	-.2081	
	4.985	.48	-.2172	.1421
	5.401	.52	-.2202	
	5.816	.56	-.2226	.1476
	6.232	.60	-.2210	
19.9	6.647	.64	-.2680	.1576
	7.062	.68	-.2889	
	7.478	.72	-.2962	.1648
	7.893	.76	-.3052	.1738
	8.309	.80	-.3111	.1867
	8.724	.84	-.3169	.2038
	9.140	.88	-.3171	.2433
	9.555	.92	-.3255	.2312
	9.970	.96	-.3347	.2695
	10.282	.99	-.3114	.3489
24.4	4.575	.34	-.1727	.1184
	5.323	.40	-.2097	.1229
	5.855	.44	-.2299	
	6.388	.48	-.2470	.1152
	6.920	.52	-.2497	
	7.453	.56	-.2553	.1145
	7.985	.60	-.2617	
	8.517	.64	-.2979	.1162
	9.049	.68	-.3212	
	9.582	.72	-.3254	.1223
	10.114	.76	-.3239	.1290
	10.646	.80	-.3224	.1384
	10.179	.84	-.3254	.1502
	11.711	.88	-.3187	.1681
	12.243	.92	-.3235	.1900
	12.776	.96	-.3296	.2173
	13.042	.98	-.3379	.2611
	13.175	.99	-.3225	.2846

TABLE B2.- Continued

MACH = 1.66 ALPHA =12.98 POINT = 109

PO = 1098.90 PSF P = 236.43 PSF Q = 456.05 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1455	.2394
	2.570	.52	-.1792	
	3.163	.64	-.2465	.2434
	3.855	.78	-.2877	.2445
	4.350	.88	-.3134	.2541
	4.696	.95	-.2971	.2810
	4.893	.99	-.2412	.3103
15.5	2.484	.33	-.1489	
	3.011	.40	-.1688	.1539
	3.538	.47	-.1831	.1594
	4.065	.54	-.1948	.1674
	4.517	.60	-.2239	.1756
	4.968	.66	-.2692	.1856
	5.420	.72	-.3034	.1953
	5.872	.78	-.3316	.2065
	6.474	.86	-.3523	.2254
	6.926	.92	-.3510	.2421
	7.227	.96	-.3453	.2617
	7.453	.99	-.3050	.3230
19.9	2.077	.20		.1423
	3.116	.30	-.1745	.1488
	4.154	.40	-.2123	.1617
	4.570	.44	-.2162	
	4.985	.48	-.2303	.1634
	5.401	.52	-.2340	
	5.816	.56	-.2322	.1711
	6.232	.60	-.3006	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.3138	.1797
	7.062	.68	-.3202	
	7.478	.72	-.3284	.1875
	7.893	.76	-.3361	.1980
	8.309	.80	-.3382	.2114
	8.724	.84	-.3431	.2290
	9.140	.88	-.3438	.2695
	9.555	.92	-.3531	.2624
	9.970	.96	-.3631	.2988
	10.282	.99	-.3416	.3829
24.4	4.575	.34	-.1996	.1386
	5.323	.40	-.2178	.1442
	5.855	.44	-.2386	
	6.388	.48	-.2480	.1358
	6.920	.52	-.2662	
	7.453	.56	-.2895	.1350
	7.985	.60	-.3106	
	8.517	.64	-.3318	.1379
	9.049	.68	-.3384	
	9.582	.72	-.3445	.1449
	10.114	.76	-.3456	.1505
	10.646	.80	-.3455	.1634
	10.179	.84	-.3484	.1779
	11.711	.88	-.3394	.1975
	12.243	.92	-.3449	.2210
	12.776	.96	-.3541	.2496
	13.042	.98	-.3648	.3012
	13.175	.99	-.3505	.3206

TABLE B2.- Continued

MACH = 1.66 ALPHA =13.98 POINT = 110

PO = 1099.38 PSF P = 236.53 PSF Q = 456.25 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1578	.2597
	2.570	.52	-.1883	
	3.163	.64	-.2854	.2635
	3.855	.78	-.3150	.2671
	4.350	.88	-.3361	.2784
	4.696	.95	-.3283	.3047
	4.893	.99	-.2732	.3305
15.5	2.484	.33	-.1581	
	3.011	.40	-.1770	.1742
	3.538	.47	-.1937	.1771
	4.065	.54	-.2202	.1864
	4.517	.60	-.2618	.1952
	4.968	.66	-.3267	.2060
	5.420	.72	-.3408	.2154
	5.872	.78	-.3566	.2267
	6.474	.86	-.3747	.2496
	6.926	.92	-.3740	.2690
	7.227	.96	-.3721	.2960
	7.453	.99	-.3374	.3570
19.9	2.077	.20		.1628
	3.116	.30	-.1800	.1708
	4.154	.40	-.2198	.1808
	4.570	.44	-.2239	
	4.985	.48	-.2461	.1874
	5.401	.52	-.2448	
	5.816	.56	-.2867	.1964
	6.232	.60	-.3384	
19.9	6.647	.64	-.3409	.2023
	7.062	.68	-.3481	
	7.478	.72	-.3564	.2129
	7.893	.76	-.3586	.2224
	8.309	.80	-.3589	.2351
	8.724	.84	-.3637	.2546
	9.140	.88	-.3656	.2985
	9.555	.92	-.3737	.2872
	9.970	.96	-.3825	.3277
	10.282	.99	-.3648	.4158
24.4	4.575	.34	-.2128	.1568
	5.323	.40	-.2277	.1629
	5.855	.44	-.2422	
	6.388	.48	-.2510	.1557
	6.920	.52	-.3287	
	7.453	.56	-.3379	.1571
	7.985	.60	-.3416	
	8.517	.64	-.3447	.1590
	9.049	.68	-.3469	
	9.582	.72	-.3511	.1665
	10.114	.76	-.3584	.1728
	10.646	.80	-.3625	.1869
	10.179	.84	-.3670	.2026
	11.711	.88	-.3557	.2219
	12.243	.92	-.3653	.2500
	12.776	.96	-.3751	.2808
	13.042	.98	-.3879	.3440
	13.175	.99	-.3747	.3586

TABLE B2.- Continued

MACH = 1.66 ALPHA = 5.99 POINT = 111

PO = 1098.82 PSF P = 236.41 PSF Q = 456.02 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0662	.1087
	2.570	.52	-.0750	
	3.163	.64	-.0747	.1043
	3.855	.78	-.0638	.0908
	4.350	.88	-.0611	.0692
	4.696	.95	-.0306	.0034
	4.893	.99	.0533	-.0141
15.5	2.484	.33	-.0780	
	3.011	.40	-.0885	.0338
	3.538	.47	-.0932	.0389
	4.065	.54	-.0913	.0483
	4.517	.60	-.0877	.0541
	4.968	.66	-.0761	.0591
	5.420	.72	-.0669	.0623
	5.872	.78	-.0702	.0621
	6.474	.86	-.0690	.0577
	6.926	.92	-.0754	.0441
	7.227	.96	-.0660	-.0237
	7.453	.99	.0058	-.0736
19.9	2.077	.20		.0228
	3.116	.30	-.1055	.0199
	4.154	.40	-.1284	.0268
	4.570	.44	-.1339	
	4.985	.48	-.1368	.0314
	5.401	.52	-.1349	
	5.816	.56	-.1350	.0358
	6.232	.60	-.1333	
19.9	6.647	.64	-.1264	.0358
	7.062	.68	-.1171	
	7.478	.72	-.1053	.0333
	7.893	.76	-.0911	.0385
	8.309	.80	-.0826	.0469
	8.724	.84	-.0889	.0551
	9.140	.88	-.0795	.0763
	9.555	.92	-.0898	.0384
	9.970	.96	-.1051	-.0287
	10.282	.99	-.0271	-.0315
24.4	4.575	.34	-.1350	.0081
	5.323	.40	-.1494	.0123
	5.855	.44	-.1606	
	6.388	.48	-.1675	.0055
	6.920	.52	-.1691	
	7.453	.56	-.1708	.0028
	7.985	.60	-.1682	
	8.517	.64	-.1576	-.0055
	9.049	.68	-.1471	
	9.582	.72	-.1387	-.0094
	10.114	.76	-.1251	-.0092
	10.646	.80	-.1137	-.0067
	10.179	.84	-.1039	-.0020
	11.711	.88	-.0931	.0127
	12.243	.92	-.0906	.0175
	12.776	.96	-.1196	-.0219
	13.042	.98	-.1404	-.0546
	13.175	.99	-.0639	-.0842

TABLE B2.- Continued

MACH = 1.70 ALPHA = 5.92 POINT = 119

PO = 1112.74 PSF P = 225.43 PSF Q = 456.05 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0664	.1031
	2.570	.52	-.0737	
	3.163	.64	-.0745	.0974
	3.855	.78	-.0650	.0837
	4.350	.88	-.0575	.0605
	4.696	.95	-.0269	-.0037
	4.893	.99	.0556	-.0235
15.5	2.484	.33	-.0771	
	3.011	.40	-.0873	.0312
	3.538	.47	-.0963	.0366
	4.065	.54	-.0957	.0472
	4.517	.60	-.0848	.0532
	4.968	.66	-.0658	.0584
	5.420	.72	-.0585	.0623
	5.872	.78	-.0651	.0658
	6.474	.86	-.0635	.0583
	6.926	.92	-.0664	.0413
	7.227	.96	-.0540	-.0328
	7.453	.99	.0208	-.0856
19.9	2.077	.20		.0183
	3.116	.30	-.1029	.0206
	4.154	.40	-.1231	.0238
	4.570	.44	-.1286	
	4.985	.48	-.1320	.0285
	5.401	.52	-.1317	
	5.816	.56	-.1307	.0326
	6.232	.60	-.1263	
19.9	6.647	.64	-.1209	.0380
	7.062	.68	-.1116	
	7.478	.72	-.0970	.0337
	7.893	.76	-.0833	.0396
	8.309	.80	-.0753	.0464
	8.724	.84	-.0806	.0539
	9.140	.88	-.0705	.0728
	9.555	.92	-.0793	.0318
	9.970	.96	-.0874	-.0461
	10.282	.99	-.0071	-.0417
24.4	4.575	.34	-.1338	.0074
	5.323	.40	-.1464	.0107
	5.855	.44	-.1562	
	6.388	.48	-.1631	.0009
	6.920	.52	-.1640	
	7.453	.56	-.1631	-.0012
	7.985	.60	-.1613	
	8.517	.64	-.1601	-.0040
	9.049	.68	-.1461	
	9.582	.72	-.1313	-.0079
	10.114	.76	-.1155	-.0085
	10.646	.80	-.1050	-.0057
	10.179	.84	-.0957	-.0008
	11.711	.88	-.0854	.0156
	12.243	.92	-.0795	.0193
	12.776	.96	-.0984	-.0310
	13.042	.98	-.1168	-.0694
	13.175	.99	-.0380	-.0974

TABLE B2.- Continued

MACH = 1.70   ALPHA = 7.94   POINT = 120

PO = 1112.86 PSF   P = 225.46 PSF   Q = 456.10 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0929	.1374
	2.570	.52	-.1051	
	3.163	.64	-.1132	.1354
	3.855	.78	-.1177	.1276
	4.350	.88	-.1252	.1182
	4.696	.95	-.1032	.0918
	4.893	.99	-.0237	.1110
15.5	2.484	.33	-.1000	
	3.011	.40	-.1118	.0623
	3.538	.47	-.1249	.0674
	4.065	.54	-.1276	.0778
	4.517	.60	-.1211	.0854
	4.968	.66	-.1103	.0926
	5.420	.72	-.1120	.0986
	5.872	.78	-.1216	.1058
	6.474	.86	-.1439	.1076
	6.926	.92	-.1595	.1018
	7.227	.96	-.1540	.0825
	7.453	.99	-.0809	.0813
19.9	2.077	.20		.0503
	3.116	.30	-.1237	.0508
	4.154	.40	-.1490	.0570
	4.570	.44	-.1563	
	4.985	.48	-.1623	.0622
	5.401	.52	-.1631	
	5.816	.56	-.1665	.0694
	6.232	.60	-.1664	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1603	.0760
	7.062	.68	-.1479	
	7.478	.72	-.1390	.0742
	7.893	.76	-.1296	.0813
	8.309	.80	-.1334	.0923
	8.724	.84	-.1637	.1047
	9.140	.88	-.1621	.1309
	9.555	.92	-.1791	.1019
	9.970	.96	-.1845	.0939
	10.282	.99	-.1119	.1256
24.4	4.575	.34	-.1533	.0402
	5.323	.40	-.1708	.0457
	5.855	.44	-.1836	
	6.388	.48	-.1931	.0343
	6.920	.52	-.1977	
	7.453	.56	-.1995	.0345
	7.985	.60	-.2030	
	8.517	.64	-.1935	.0337
	9.049	.68	-.1800	
	9.582	.72	-.1689	.0328
	10.114	.76	-.1594	.0356
	10.646	.80	-.1630	.0413
	10.179	.84	-.1770	.0486
	11.711	.88	-.1776	.0659
	12.243	.92	-.1825	.0792
	12.776	.96	-.1835	.0792
	13.042	.98	-.1900	.0804
	13.175	.99	-.1487	.0741

TABLE B2.- Continued

MACH = 1.70 ALPHA = 8.97 POINT = 121

PO = 1113.18 PSF P = 225.52 PSF Q = 456.23 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1040	.1566
	2.570	.52	-.1219	
	3.163	.64	-.1302	.1568
	3.855	.78	-.1489	.1502
	4.350	.88	-.1632	.1460
	4.696	.95	-.1420	.1359
	4.893	.99	-.0699	.1623
15.5	2.484	.33	-.1117	
	3.011	.40	-.1247	.0806
	3.538	.47	-.1368	.0852
	4.065	.54	-.1413	.0950
	4.517	.60	-.1374	.1039
	4.968	.66	-.1327	.1115
	5.420	.72	-.1353	.1188
	5.872	.78	-.1555	.1239
	6.474	.86	-.1912	.1316
	6.926	.92	-.2025	.1325
	7.227	.96	-.2051	.1263
	7.453	.99	-.1255	.1487
19.9	2.077	.20		.0679
	3.116	.30	-.1347	.0683
	4.154	.40	-.1603	.0759
	4.570	.44	-.1687	
	4.585	.48	-.1757	.0816
	5.401	.52	-.1775	
	5.816	.56	-.1837	.0897
	6.232	.60	-.1841	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1759	.0963
	7.062	.68	-.1670	
	7.478	.72	-.1602	.0967
	7.893	.76	-.1619	.1038
	8.309	.80	-.1852	.1172
	8.724	.84	-.2101	.1297
	9.140	.88	-.2110	.1589
	9.555	.92	-.2182	.1371
	9.970	.96	-.2166	.1417
	10.282	.99	-.1630	.1925
24.4	4.575	.34	-.1605	.0581
	5.323	.40	-.1827	.0623
	5.855	.44	-.1961	
	6.388	.48	-.2069	.0558
	6.920	.52	-.2126	
	7.453	.56	-.2166	.0543
	7.985	.60	-.2185	
	8.517	.64	-.2078	.0554
	9.049	.68	-.1978	
	9.582	.72	-.1892	.0552
	10.114	.76	-.2010	.0581
	10.646	.80	-.2157	.0658
	10.179	.84	-.2225	.0756
	11.711	.88	-.2159	.0915
	12.243	.92	-.2169	.1078
	12.776	.96	-.2241	.1206
	13.042	.98	-.2269	.1307
	13.175	.99	-.1975	.1390

TABLE B2.- Continued

MACH = 1.70 ALPHA = 9.96 POINT = 122

PO = 1113.80 PSF P = 225.65 PSF Q = 456.49 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1146	.1729
	2.570	.52	-.1386	
	3.163	.64	-.1509	.1745
	3.855	.78	-.1814	.1718
	4.350	.88	-.1996	.1700
	4.696	.95	-.1877	.1852
	4.893	.99	-.1109	.2085
15.5	2.484	.33	-.1220	
	3.011	.40	-.1356	.0975
	3.538	.47	-.1478	.1037
	4.065	.54	-.1557	.1142
	4.517	.60	-.1559	.1226
	4.968	.66	-.1536	.1310
	5.420	.72	-.1636	.1385
	5.872	.78	-.1948	.1431
	6.474	.86	-.2381	.1549
	6.926	.92	-.2488	.1596
	7.227	.96	-.2311	.1603
	7.453	.99	-.1723	.2016
19.9	2.077	.20		.0872
	3.116	.30	-.1447	.0877
	4.154	.40	-.1723	.0955
	4.570	.44	-.1809	
	4.985	.48	-.1884	.1017
	5.401	.52	-.1932	
	5.816	.56	-.2011	.1109
	6.232	.60	-.1996	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1920	.1153
	7.062	.68	-.1866	
	7.478	.72	-.1958	.1173
	7.893	.76	-.2210	.1245
	8.309	.80	-.2338	.1372
	8.724	.84	-.2471	.1529
	9.140	.88	-.2426	.1854
	9.555	.92	-.2490	.1690
	9.970	.96	-.2534	.1832
	10.282	.99	-.2074	.2482
24.4	4.575	.34	-.1633	.0775
	5.323	.40	-.1930	.0819
	5.855	.44	-.2073	
	6.388	.48	-.2190	.0762
	6.920	.52	-.2269	
	7.453	.56	-.2327	.0753
	7.985	.60	-.2308	
	8.517	.64	-.2223	.0740
	9.049	.68	-.2178	
	9.582	.72	-.2356	.0760
	10.114	.76	-.2516	.0796
	10.646	.80	-.2548	.0874
	10.179	.84	-.2541	.0984
	11.711	.88	-.2431	.1163
	12.243	.92	-.2504	.1366
	12.776	.96	-.2579	.1573
	13.042	.98	-.2599	.1785
	13.175	.99	-.2358	.1947

TABLE B2.- Continued

MACH = 1.70 ALPHA =10.94 POINT = 123

PO = 1112.77 PSF P = 225.44 PSF Q = 456.06 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1256	.1932
	2.570	.52	-.1505	
	3.163	.64	-.1740	.1964
	3.855	.78	-.2161	.1941
	4.350	.88	-.2347	.1942
	4.696	.95	-.2259	.2239
	4.893	.99	-.1494	.2465
15.5	2.484	.33	-.1338	
	3.011	.40	-.1449	.1147
	3.538	.47	-.1584	.1189
	4.065	.54	-.1734	.1296
	4.517	.60	-.1754	.1381
	4.968	.66	-.1802	.1495
	5.420	.72	-.2015	.1550
	5.872	.78	-.2437	.1612
	6.474	.86	-.2787	.1775
	6.926	.92	-.2759	.1862
	7.227	.96	-.2628	.1908
	7.453	.99	-.2112	.2452
19.9	2.077	.20		.1023
	3.116	.30	-.1562	.1047
	4.154	.40	-.1846	.1114
	4.570	.44	-.1934	
	4.985	.48	-.2027	.1218
	5.401	.52	-.2091	
	5.816	.56	-.2155	.1299
	6.232	.60	-.2131	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.2129	.1355
	7.062	.68	-.2306	
	7.478	.72	-.2525	.1409
	7.893	.76	-.2653	.1496
	8.309	.80	-.2701	.1616
	8.724	.84	-.2748	.1775
	9.140	.88	-.2726	.2118
	9.555	.92	-.2786	.1985
	9.970	.96	-.2830	.2215
	10.282	.99	-.2481	.2950
24.4	4.575	.34	-.1635	.0934
	5.323	.40	-.2018	.0985
	5.855	.44	-.2175	
	6.388	.48	-.2298	.0926
	6.920	.52	-.2405	
	7.453	.56	-.2442	.0966
	7.985	.60	-.2410	
	8.517	.64	-.2417	.0927
	9.049	.68	-.2699	
	9.582	.72	-.2821	.0976
	10.114	.76	-.2821	.1029
	10.646	.80	-.2803	.1128
	10.179	.84	-.2793	.1250
	11.711	.88	-.2713	.1427
	12.243	.92	-.2792	.1647
	12.776	.96	-.2857	.1886
	13.042	.98	-.2870	.2183
	13.175	.99	-.2678	.2413

TABLE B2.- Continued

MACH = 1.70 ALPHA =11.94 POINT = 124

PO = 1142.20 PSF P = 231.40 PSF Q = 468.13 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1449	.1957
	2.570	.52	-.1741	
	3.163	.64	-.2144	.2008
	3.855	.78	-.2544	.1985
	4.350	.88	-.2757	.2018
	4.696	.95	-.2552	.2282
	4.893	.99	-.1942	.2597
15.5	2.484	.33	-.1493	
	3.011	.40	-.1617	.1176
	3.538	.47	-.1789	.1224
	4.065	.54	-.1952	.1325
	4.517	.60	-.2045	.1421
	4.968	.66	-.2229	.1519
	5.420	.72	-.2597	.1581
	5.872	.78	-.2912	.1663
	6.474	.86	-.3134	.1839
	6.926	.92	-.3063	.1968
	7.227	.96	-.3002	.2053
	7.453	.99	-.2534	.2620
19.9	2.077	.20		.1065
	3.116	.30	-.1723	.1096
	4.154	.40	-.2002	.1173
	4.570	.44	-.2090	
	4.985	.48	-.2215	.1264
	5.401	.52	-.2276	
	5.816	.56	-.2306	.1353
	6.232	.60	-.2402	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.2660	.1413
	7.062	.68	-.2844	
	7.478	.72	-.2937	.1480
	7.893	.76	-.2977	.1572
	8.309	.80	-.2984	.1691
	8.724	.84	-.3014	.1857
	9.140	.88	-.3008	.2225
	9.555	.92	-.3069	.2088
	9.970	.96	-.3120	.2420
	10.282	.99	-.2870	.3205
24.4	4.575	.34	-.1802	.0986
	5.323	.40	-.2146	.1031
	5.855	.44	-.2313	
	6.388	.48	-.2454	.0982
	6.920	.52	-.2555	
	7.453	.56	-.2616	.1026
	7.985	.60	-.2747	
	8.517	.64	-.3060	.1006
	9.049	.68	-.3133	
	9.582	.72	-.3132	.1032
	10.114	.76	-.3103	.1093
	10.646	.80	-.3068	.1222
	10.179	.84	-.3072	.1341
	11.711	.88	-.3008	.1538
	12.243	.92	-.3089	.1777
	12.776	.96	-.3119	.2006
	13.042	.98	-.3174	.2408
	13.175	.99	-.3021	.2648

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE B2.- Continued

MACH = 1.70 ALPHA =11.94 POINT =1124

PO = 1113.00 PSF P = 225.50 PSF Q = 456.15 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1359	.2137
	2.570	.52	-.1657	
	3.163	.64	-.2069	.2190
	3.855	.78	-.2482	.2166
	4.350	.88	-.2701	.2201
	4.696	.95	-.2490	.2473
	4.893	.99	-.1863	.2795
15.5	2.484	.33	-.1403	
	3.011	.40	-.1530	.1337
	3.538	.47	-.1706	.1386
	4.065	.54	-.1874	.1489
	4.517	.60	-.1969	.1587
	4.968	.66	-.2157	.1688
	5.420	.72	-.2536	.1752
	5.872	.78	-.2859	.1835
	6.474	.86	-.3087	.2017
	6.926	.92	-.3014	.2148
	7.227	.96	-.2951	.2236
	7.453	.99	-.2471	.2819
19.9	2.077	.20		.1221
	3.116	.30	-.1638	.1254
	4.154	.40	-.1925	.1333
	4.570	.44	-.2015	
	4.985	.48	-.2144	.1427
	5.401	.52	-.2205	
	5.816	.56	-.2236	.1517
	6.232	.60	-.2335	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.2600	.1578
	7.062	.68	-.2789	
	7.478	.72	-.2885	.1649
	7.893	.76	-.2927	.1743
	8.309	.80	-.2933	.1866
	8.724	.84	-.2964	.2037
	9.140	.88	-.2957	.2414
	9.555	.92	-.3021	.2271
	9.970	.96	-.3071	.2613
	10.282	.99	-.2817	.3420
24.4	4.575	.34	-.1721	.1142
	5.323	.40	-.2074	.1188
	5.855	.44	-.2245	
	6.388	.48	-.2390	.1138
	6.920	.52	-.2493	
	7.453	.56	-.2556	.1182
	7.985	.60	-.2690	
	8.517	.64	-.3010	.1162
	9.049	.68	-.3087	
	9.582	.72	-.3085	.1188
	10.114	.76	-.3056	.1252
	10.646	.80	-.3019	.1383
	10.179	.84	-.3023	.1506
	11.711	.88	-.2957	.1708
	12.243	.92	-.3041	.1953
	12.776	.96	-.3071	.2188
	13.042	.98	-.3128	.2600
	13.175	.99	-.2971	.2846

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE B2.- Continued

MACH = 1.70 ALPHA =12.91 POINT = 125

PO = 1112.82 PSF P = 225.45 PSF Q = 456.08 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1448	.2324
	2.570	.52	-.1769	
	3.163	.64	-.2417	.2379
	3.855	.78	-.2783	.2398
	4.350	.88	-.2958	.2456
	4.696	.95	-.2755	.2757
	4.893	.99	-.2188	.3037
15.5	2.484	.33	-.1459	
	3.011	.40	-.1626	.1525
	3.538	.47	-.1800	.1569
	4.065	.54	-.1955	.1663
	4.517	.60	-.2307	.1765
	4.968	.66	-.2673	.1841
	5.420	.72	-.2894	.1927
	5.872	.78	-.3143	.2030
	6.474	.86	-.3307	.2236
	6.926	.92	-.3275	.2394
	7.227	.96	-.3208	.2557
	7.453	.99	-.2785	.3124
19.9	2.077	.20		.1412
	3.116	.30	-.1725	.1438
	4.154	.40	-.2043	.1528
	4.570	.44	-.2133	
	4.985	.48	-.2265	.1629
	5.401	.52	-.2306	
	5.816	.56	-.2403	.1694
	6.232	.60	-.2897	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.3009	.1792
	7.062	.68	-.3096	
	7.478	.72	-.3160	.1867
	7.893	.76	-.3173	.1954
	8.309	.80	-.3159	.2082
	8.724	.84	-.3192	.2262
	9.140	.88	-.3188	.2660
	9.555	.92	-.3250	.2551
	9.970	.96	-.3339	.2957
	10.282	.99	-.3138	.3817
24.4	4.575	.34	-.1979	.1335
	5.323	.40	-.2152	.1375
	5.855	.44	-.2317	
	6.388	.48	-.2455	.1328
	6.920	.52	-.2756	
	7.453	.56	-.2862	.1355
	7.985	.60	-.3144	
	8.517	.64	-.3206	.1373
	9.049	.68	-.3259	
	9.582	.72	-.3274	.1403
	10.114	.76	-.3259	.1470
	10.646	.80	-.3236	.1591
	10.179	.84	-.3253	.1744
	11.711	.88	-.3180	.1968
	12.243	.92	-.3250	.2213
	12.776	.96	-.3295	.2485
	13.042	.98	-.3389	.2987
	13.175	.99	-.3241	.3205

TABLE B2.- Continued

MACH = 1.70 ALPHA =13.91 POINT = 126

PO = 1112.67 PSF P = 225.42 PSF Q = 456.02 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1555	.2547
	2.570	.52	-.1870	
	3.163	.64	-.2741	.2598
	3.855	.78	-.3041	.2631
	4.350	.88	-.3145	.2744
	4.696	.95	-.3035	.3005
	4.893	.99	-.2476	.3290
15.5	2.484	.33	-.1506	
	3.011	.40	-.1704	.1724
	3.538	.47	-.1912	.1747
	4.065	.54	-.2205	.1850
	4.517	.60	-.2688	.1937
	4.968	.66	-.3092	.2015
	5.420	.72	-.3207	.2110
	5.872	.78	-.3377	.2230
	6.474	.86	-.3506	.2462
	6.926	.92	-.3493	.2641
	7.227	.96	-.3440	.2859
	7.453	.99	-.3056	.3438
19.9	2.077	.20		.1598
	3.116	.30	-.1798	.1635
	4.154	.40	-.2182	.1743
	4.570	.44	-.2257	
	4.985	.48	-.2401	.1817
	5.401	.52	-.2468	
	5.816	.56	-.3023	.1890
	6.232	.60	-.3237	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.3295	.1998
	7.062	.68	-.3380	
	7.478	.72	-.3395	.2107
	7.893	.76	-.3369	.2194
	8.309	.80	-.3370	.2335
	8.724	.84	-.3406	.2521
	9.140	.88	-.3407	.2946
	9.555	.92	-.3482	.2860
	9.970	.96	-.3593	.3297
	10.282	.99	-.3421	.4128
24.4	4.575	.34	-.2130	.1527
	5.323	.40	-.2209	.1579
	5.855	.44	-.2352	
	6.388	.48	-.2659	.1532
	6.920	.52	-.3269	
	7.453	.56	-.3193	.1531
	7.985	.60	-.3290	
	8.517	.64	-.3301	.1572
	9.049	.68	-.3330	
	9.582	.72	-.3369	.1657
	10.114	.76	-.3412	.1729
	10.646	.80	-.3411	.1840
	10.179	.84	-.3452	.2008
	11.711	.88	-.3358	.2230
	12.243	.92	-.3423	.2490
	12.776	.96	-.3503	.2798
	13.042	.98	-.3619	.3403
	13.175	.99	-.3483	.3558

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE B2.- Continued

MACH = 1.70 ALPHA = 5.91 POINT = 127

PO = 1113.08 PSF P = 225.50 PSF Q = 456.19 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0689	.1018
	2.570	.52	-.0755	
	3.163	.64	-.0754	.0962
	3.855	.78	-.0665	.0836
	4.350	.88	-.0604	.0617
	4.696	.95	-.0299	-.0014
	4.893	.99	.0557	-.0203
15.5	2.484	.33	-.0781	
	3.011	.40	-.0879	.0329
	3.538	.47	-.0963	.0374
	4.065	.54	-.0966	.0478
	4.517	.60	-.0860	.0536
	4.968	.66	-.0676	.0576
	5.420	.72	-.0610	.0624
	5.872	.78	-.0677	.0651
	6.474	.86	-.0665	.0574
	6.926	.92	-.0691	.0400
	7.227	.96	-.0570	-.0312
	7.453	.99	.0176	-.0835
19.9	2.077	.20		.0191
	3.116	.30	-.1037	.0210
	4.154	.40	-.1242	.0243
	4.570	.44	-.1298	
	4.985	.48	-.1339	.0282
	5.401	.52	-.1338	
	5.816	.56	-.1334	.0314
	6.232	.60	-.1278	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1232	.0361
	7.062	.68	-.1142	
	7.478	.72	-.0998	.0331
	7.893	.76	-.0860	.0390
	8.309	.80	-.0770	.0460
	8.724	.84	-.0825	.0529
	9.140	.88	-.0726	.0736
	9.555	.92	-.0818	.0346
	9.970	.96	-.0897	-.0422
	10.282	.99	-.0091	-.0373
24.4	4.575	.34	-.1333	.0091
	5.323	.40	-.1469	.0113
	5.855	.44	-.1569	
	6.388	.48	-.1639	.0017
	6.920	.52	-.1652	
	7.453	.56	-.1643	-.0013
	7.985	.60	-.1631	
	8.517	.64	-.1605	-.0046
	9.049	.68	-.1471	
	9.582	.72	-.1331	-.0088
	10.114	.76	-.1172	-.0093
	10.646	.80	-.1065	-.0060
	10.179	.84	-.0965	-.0008
	11.711	.88	-.0863	.0157
	12.243	.92	-.0813	.0216
	12.776	.96	-.1000	-.0264
	13.042	.98	-.1176	-.0649
	13.175	.99	-.0394	-.0889

TABLE B2.- Continued

MACH = 2.60 ALPHA = 5.80 POINT = 128

PO = 1253.48 PSF P = 160.20 PSF Q = 448.56 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0724	.0851
	2.570	.52	-.0807	
	3.163	.64	-.0779	.0794
	3.855	.78	-.0610	.0633
	4.350	.88	-.0430	-.0114
	4.696	.95	.0019	-.0249
	4.893	.99	.0914	-.0389
15.5	2.484	.33	-.0803	
	3.011	.40	-.0894	.0331
	3.538	.47	-.0962	.0398
	4.065	.54	-.0953	.0479
	4.517	.60	-.0873	.0538
	4.968	.66	-.0735	.0563
	5.420	.72	-.0641	.0585
	5.872	.78	-.0657	.0566
	6.474	.86	-.0585	.0401
	6.926	.92	-.0483	-.0538
	7.227	.96	-.0169	-.0853
	7.453	.99	.0595	-.1059
19.9	2.077	.20		.0083
	3.116	.30	-.0942	.0115
	4.154	.40	-.1128	.0170
	4.570	.44	-.1174	
	4.985	.48	-.1223	.0213
	5.401	.52	-.1217	
	5.816	.56	-.1188	.0260
	6.232	.60	-.1109	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1029	.0309
	7.062	.68	-.0935	
	7.478	.72	-.0832	.0326
	7.893	.76	-.0723	.0351
	8.309	.80	-.0646	.0421
	8.724	.84	-.0646	.0420
	9.140	.88	-.0502	-.0094
	9.555	.92	-.0444	-.0638
	9.970	.96	-.0273	-.0834
	10.282	.99	.0621	-.0174
24.4	4.575	.34	-.1182	-.0054
	5.323	.40	-.1305	-.0036
	5.855	.44	-.1394	
	6.388	.48	-.1442	-.0068
	6.920	.52	-.1456	
	7.453	.56	-.1436	-.0071
	7.985	.60	-.1357	
	8.517	.64	-.1258	-.0088
	9.049	.68	-.1149	
	9.582	.72	-.1032	-.0077
	10.114	.76	-.0909	-.0041
	10.646	.80	-.0808	.0029
	10.179	.84	-.0724	.0105
	11.711	.88	-.0556	.0106
	12.243	.92	-.0404	-.0580
	12.776	.96	-.0298	-.0662
	13.042	.98	-.0271	-.0545
	13.175	.99	.0462	-.0610

C-3

TABLE B2.- Continued

MACH = 2.00 ALPHA = 7.81 POINT = 129

PO = 1253.48 PSF P = 160.20 PSF Q = 448.56 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0962	.1186
	2.570	.52	-.1114	
	3.163	.64	-.1173	.1126
	3.855	.78	-.1075	.1010
	4.350	.88	-.0916	.0733
	4.696	.95	-.0484	.0477
	4.893	.99	.0349	.0633
15.5	2.484	.33	-.0982	
	3.011	.40	-.1102	.0623
	3.538	.47	-.1209	.0692
	4.065	.54	-.1245	.0783
	4.517	.60	-.1208	.0844
	4.968	.66	-.1125	.0882
	5.420	.72	-.1127	.0929
	5.872	.78	-.1163	.0957
	6.474	.86	-.1156	.0883
	6.926	.92	-.1001	.0701
	7.227	.96	-.0775	.0234
	7.453	.99	.0010	.0080
19.9	2.077	.20		.0373
	3.116	.30	-.1136	.0406
	4.154	.40	-.1339	.0464
	4.570	.44	-.1411	
	4.985	.48	-.1489	.0507
	5.401	.52	-.1503	
	5.816	.56	-.1473	.0571
	6.232	.60	-.1431	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1398	.0634
	7.062	.68	-.1342	
	7.478	.72	-.1279	.0664
	7.893	.76	-.1200	.0730
	8.309	.80	-.1170	.0819
	8.724	.84	-.1153	.0867
	9.140	.88	-.1021	.1046
	9.555	.92	-.0977	.0667
	9.970	.96	-.0873	.0216
	10.282	.99	-.0046	.0775
24.4	4.575	.34	-.1356	.0247
	5.323	.40	-.1512	.0257
	5.855	.44	-.1612	
	6.388	.48	-.1688	.0228
	6.920	.52	-.1733	
	7.453	.56	-.1716	.0235
	7.985	.60	-.1641	
	8.517	.64	-.1576	.0214
	9.049	.68	-.1511	
	9.582	.72	-.1441	.0261
	10.114	.76	-.1372	.0295
	10.646	.80	-.1268	.0387
	10.179	.84	-.1190	.0499
	11.711	.88	-.1026	.0684
	12.243	.92	-.0927	.0713
	12.776	.96	-.0749	.0338
	13.042	.98	-.0705	.0269
	13.175	.99	-.0179	.0248

TABLE B2.- Continued

MACH = 2.00 ALPHA = 9.82 POINT = 130

PO = 1253.68 PSF P = 160.23 PSF Q = 448.63 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1173	.1532
	2.570	.52	-.1427	
	3.163	.64	-.1632	.1494
	3.855	.78	-.1537	.1405
	4.350	.88	-.1400	.1317
	4.696	.95	-.1113	.1237
	4.893	.99	-.0259	.1611
15.5	2.484	.33	-.1172	
	3.011	.40	-.1296	.0922
	3.538	.47	-.1432	.0994
	4.065	.54	-.1551	.1084
	4.517	.60	-.1683	.1156
	4.968	.66	-.1648	.1217
	5.420	.72	-.1598	.1293
	5.872	.78	-.1678	.1328
	6.474	.86	-.1692	.1361
	6.926	.92	-.1553	.1335
	7.227	.96	-.1333	.1215
	7.453	.99	-.0611	.1302
19.9	2.077	.20		.0679
	3.116	.30	-.1282	.0691
	4.154	.40	-.1505	.0766
	4.570	.44	-.1603	
	4.985	.48	-.1698	.0816
	5.401	.52	-.1741	
	5.816	.56	-.1825	.0899
	6.232	.60	-.1878	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1811	.0979
	7.062	.68	-.1752	
	7.478	.72	-.1705	.1025
	7.893	.76	-.1659	.1109
	8.309	.80	-.1607	.1227
	8.724	.84	-.1575	.1333
	9.140	.88	-.1488	.1585
	9.555	.92	-.1413	.1392
	9.970	.96	-.1328	.1386
	10.282	.99	-.0705	.1880
24.4	4.575	.34	-.1502	.0543
	5.323	.40	-.1701	.0576
	5.855	.44	-.1813	
	6.388	.48	-.1934	.0537
	6.920	.52	-.2017	
	7.453	.56	-.2092	.0553
	7.985	.60	-.2047	
	8.517	.64	-.1990	.0543
	9.049	.68	-.1939	
	9.582	.72	-.1860	.0613
	10.114	.76	-.1781	.0680
	10.646	.80	-.1703	.0784
	10.179	.84	-.1660	.0927
	11.711	.88	-.1436	.1119
	12.243	.92	-.1351	.1269
	12.776	.96	-.1256	.1307
	13.042	.98	-.1219	.1443
	13.175	.99	-.0857	.1470

TABLE B2.- Continued

MACH = 2.00 ALPHA =11.80 POINT = 131

PO = 1253.80 PSF P = 160.24 PSF Q = 448.68 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1361	.1915
	2.570	.52	-.1747	
	3.163	.64	-.2033	.1876
	3.855	.78	-.1924	.1863
	4.350	.88	-.1839	.1874
	4.696	.95	-.1493	.2050
	4.893	.99	-.0762	.2372
15.5	2.484	.33	-.1301	
	3.011	.40	-.1449	.1261
	3.538	.47	-.1683	.1336
	4.065	.54	-.2009	.1430
	4.517	.60	-.2132	.1506
	4.968	.66	-.2048	.1590
	5.420	.72	-.2020	.1659
	5.872	.78	-.2063	.1740
	6.474	.86	-.2076	.1829
	6.926	.92	-.1910	.1882
	7.227	.96	-.1719	.1922
	7.453	.99	-.1171	.2305
19.9	2.077	.20		.1026
	3.116	.30	-.1436	.1025
	4.154	.40	-.1682	.1093
	4.570	.44	-.1783	
	4.985	.48	-.1918	.1162
	5.401	.52	-.2217	
	5.816	.56	-.2296	.1255
	6.232	.60	-.2232	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.2190	.1347
	7.062	.68	-.2143	
	7.478	.72	-.2089	.1408
	7.893	.76	-.2027	.1528
	8.309	.80	-.1974	.1666
	8.724	.84	-.1904	.1803
	9.140	.88	-.1828	.2145
	9.555	.92	-.1828	.2051
	9.970	.96	-.1775	.2135
	10.282	.99	-.1311	.2857
24.4	4.575	.34	-.1625	.0880
	5.323	.40	-.1836	.0940
	5.855	.44	-.1977	
	6.388	.48	-.2216	.0900
	6.920	.52	-.2458	
	7.453	.56	-.2432	.0893
	7.985	.60	-.2378	
	8.517	.64	-.2310	.0906
	9.049	.68	-.2235	
	9.582	.72	-.2159	.0991
	10.114	.76	-.2089	.1076
	10.646	.80	-.2013	.1215
	10.179	.84	-.1944	.1356
	11.711	.88	-.1750	.1568
	12.243	.92	-.1740	.1808
	12.776	.96	-.1698	.2027
	13.042	.98	-.1689	.2341
	13.175	.99	-.1448	.2456

TABLE B2.- Continued

MACH = 2.00 ALPHA =13.81 POINT = 132

PO = 1254.03 PSF P = 160.27 PSF Q = 448.76 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.1684	.2294
	2.570	.52	-.2034	
	3.163	.64	-.2187	.2311
	3.855	.78	-.2234	.2341
	4.350	.88	-.2101	.2413
	4.696	.95	-.1880	.2676
	4.893	.99	-.1269	.3021
15.5	2.484	.33	-.1667	
	3.011	.40	-.1796	.1607
	3.538	.47	-.1920	.1669
	4.065	.54	-.2173	.1786
	4.517	.60	-.2362	.1883
	4.968	.66	-.2371	.1966
	5.420	.72	-.2361	.2053
	5.872	.78	-.2379	.2156
	6.474	.86	-.2359	.2293
	6.926	.92	-.2256	.2411
	7.227	.96	-.2108	.2541
	7.453	.99	-.1643	.3107
19.9	2.077	.20		.1367
	3.116	.30	-.1844	.1377
	4.154	.40	-.1883	.1457
	4.570	.44	-.2026	
	4.985	.48	-.2129	.1525
	5.401	.52	-.2414	
	5.816	.56	-.2567	.1627
	6.232	.60	-.2537	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.2493	.1710
	7.062	.68	-.2441	
	7.478	.72	-.2373	.1813
	7.893	.76	-.2305	.1944
	8.309	.80	-.2248	.2110
	8.724	.84	-.2208	.2288
	9.140	.88	-.2163	.2771
	9.555	.92	-.2150	.2587
	9.970	.96	-.2130	.2908
	10.282	.99	-.1797	.3656
24.4	4.575	.34	-.1900	.1242
	5.323	.40	-.2042	.1318
	5.855	.44	-.2183	
	6.388	.48	-.2353	.1283
	6.920	.52	-.2602	
	7.453	.56	-.2698	.1279
	7.985	.60	-.2636	
	8.517	.64	-.2569	.1304
	9.049	.68	-.2499	
	9.582	.72	-.2418	.1407
	10.114	.76	-.2366	.1511
	10.646	.80	-.2281	.1658
	10.179	.84	-.2233	.1801
	11.711	.88	-.2055	.2027
	12.243	.92	-.2082	.2324
	12.776	.96	-.2079	.2607
	13.042	.98	-.2111	.3072
	13.175	.99	-.1926	.3301

ORIGINAL PAGE IS OF POOR QUALITY

TABLE B2.- Concluded

MACH = 2.00 ALPHA = 5.80 POINT = 133

PO = 1254.04 PSF P = 160.27 PSF Q = 448.76 PSF

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
10.6	1.977	.40	-.0728	.0863
	2.570	.52	-.0814	
	3.163	.64	-.0782	.0793
	3.855	.78	-.0618	.0635
	4.350	.88	-.0441	-.0108
	4.696	.95	.0008	-.0253
	4.893	.99	.0912	-.0392
15.5	2.484	.33	-.0805	
	3.011	.40	-.0896	.0337
	3.538	.47	-.0967	.0406
	4.065	.54	-.0963	.0485
	4.517	.60	-.0877	.0539
	4.968	.66	-.0744	.0565
	5.420	.72	-.0653	.0592
	5.872	.78	-.0666	.0569
	6.474	.86	-.0598	.0414
	6.926	.92	-.0494	-.0514
	7.227	.96	-.0184	-.0838
	7.453	.99	.0579	-.1037
19.9	2.077	.20		.0087
	3.116	.30	-.0956	.0119
	4.154	.40	-.1139	.0172
	4.570	.44	-.1186	
	4.985	.48	-.1239	.0212
	5.401	.52	-.1231	
	5.816	.56	-.1202	.0263
	6.232	.60	-.1123	

X,INCHES	Y,INCHES	ETA	CP-UPPER	CP-LOWER
19.9	6.647	.64	-.1041	.0313
	7.062	.68	-.0953	
	7.478	.72	-.0854	.0332
	7.893	.76	-.0749	.0359
	8.309	.80	-.0668	.0426
	8.724	.84	-.0665	.0426
	9.140	.88	-.0520	-.0086
	9.555	.92	-.0464	-.0624
	9.970	.96	-.0288	-.0819
	10.282	.99	.0601	-.0161
24.4	4.575	.34	-.1185	-.0050
	5.323	.40	-.1311	-.0033
	5.855	.44	-.1397	
	6.388	.48	-.1448	-.0067
	6.920	.52	-.1463	
	7.453	.56	-.1441	-.0063
	7.985	.60	-.1364	
	8.517	.64	-.1264	-.0082
	9.049	.68	-.1154	
	9.582	.72	-.1040	-.0072
	10.114	.76	-.0920	-.0035
	10.646	.80	-.0823	.0042
	10.179	.84	-.0734	.0113
	11.711	.88	-.0564	.0127
	12.243	.92	-.0415	-.0562
	12.776	.96	-.0310	-.0645
	13.042	.98	-.0279	-.0522
	13.175	.99	.0445	-.0544

TABLE B3.- SUPERSONIC WING FORCE AND MOMENT DATA

BASIC LEADING EDGE

TEST 1406. RUN 26. MACH 1.58

POINT	ALPHA, DEG	CN	CA	CL	CD	L/D	CM	CAC	CDC	ALPHA, DEG
506.	-.09	-.1423	.0256	-.1423	.0259	-5.50	.0178	.0015	.0015	-.09
507.	.94	-.0953	.0223	-.0957	.0207	-4.62	.0141	.0015	.0015	.94
508.	1.93	-.0513	.0192	-.0520	.0175	-2.98	.0105	.0015	.0015	1.93
509.	2.92	-.0068	.0157	-.0076	.0153	-.50	.0057	.0015	.0015	2.92
510.	3.41	.0154	.0140	.0146	.0149	.98	.0032	.0015	.0015	3.41
511.	3.67	.0280	.0131	.0271	.0149	1.82	.0023	.0015	.0015	3.67
512.	3.93	.0423	.0120	.0414	.0149	2.78	.0007	.0015	.0015	3.93
513.	4.92	.0867	.0082	.0857	.0156	5.50	-.0040	.0015	.0015	4.92
514.	5.90	.1309	.0044	.1298	.0178	7.29	-.0085	.0014	.0014	5.90
515.	6.92	.1768	.0002	.1755	.0215	8.16	-.0133	.0014	.0014	6.92
516.	7.41	.1991	-.0019	.1977	.0238	8.31	-.0155	.0014	.0014	7.41
517.	7.91	.2218	-.0041	.2203	.0264	8.33	-.0179	.0014	.0014	7.91
518.	8.40	.2446	-.0064	.2429	.0294	8.25	-.0199	.0013	.0013	8.40
519.	8.92	.2673	-.0085	.2653	.0330	8.04	-.0223	.0013	.0013	8.92
520.	9.95	.3138	-.0136	.3114	.0408	7.62	-.0269	.0013	.0012	9.95
521.	10.94	.3585	-.0181	.3554	.0502	7.08	-.0309	.0012	.0012	10.94
522.	11.92	.4021	-.0228	.3981	.0608	6.55	-.0345	.0012	.0012	11.92
523.	12.94	.4461	-.0274	.4409	.0732	6.03	-.0378	.0012	.0011	12.94
524.	13.92	.4874	-.0317	.4807	.0864	5.56	-.0406	.0011	.0011	13.92

TABLE B3.- Continued

BASIC LEADING EDGE

TEST 1406. RUN 27. MACH 1.62

POINT	ALPHA, DEG	CN	CA	CL	CD	L/D	CM	CAC	CDC	ALPHA, DEG
526.	-.04	-.1377	.0254	-.1377	.0255	-5.41	.0172	.0015	.0015	-.04
527.	.96	-.0947	.0223	-.0950	.0207	-4.59	.0140	.0015	.0015	.96
528.	1.98	-.0499	.0190	-.0505	.0172	-2.93	.0101	.0015	.0015	1.98
529.	2.95	-.0065	.0157	-.0073	.0154	-.48	.0059	.0015	.0015	2.95
530.	3.45	.0173	.0139	.0164	.0150	1.10	.0034	.0015	.0015	3.45
531.	3.95	.0391	.0122	.0381	.0148	2.57	.0009	.0014	.0014	3.95
532.	4.94	.0846	.0084	.0836	.0156	5.35	-.0037	.0014	.0014	4.94
533.	5.96	.1313	.0043	.1301	.0179	7.26	-.0084	.0014	.0014	5.96
534.	6.96	.1747	.0004	.1734	.0216	8.04	-.0129	.0013	.0013	6.96
535.	7.45	.1975	-.0017	.1961	.0239	8.20	-.0149	.0013	.0013	7.45
536.	7.95	.2188	-.0037	.2172	.0266	8.15	-.0174	.0013	.0013	7.95
537.	8.45	.2404	-.0060	.2387	.0294	8.11	-.0193	.0013	.0013	8.45
538.	8.96	.2628	-.0081	.2608	.0329	7.92	-.0214	.0012	.0012	8.96
539.	9.95	.3067	-.0125	.3042	.0406	7.49	-.0258	.0012	.0012	9.95
540.	10.95	.3509	-.0172	.3477	.0498	6.98	-.0293	.0012	.0012	10.95
541.	11.98	.3950	-.0218	.3909	.0606	6.45	-.0330	.0012	.0011	11.98
542.	12.97	.4361	-.0261	.4308	.0725	5.94	-.0362	.0012	.0011	12.97
543.	13.97	.4779	-.0303	.4711	.0860	5.48	-.0389	.0011	.0011	13.97

TABLE B3.- Continued

BASIC LEADING EDGE

TEST 1406. RUN 28. MACH 1.66

POINT	ALPHA, DEG	CN	CA	CL	CD	L/D	CM	CAC	CDC	ALPHA, DEG
545.	-.01	-.1348	.0250	-.1348	.0250	-5.38	.0168	.0015	.0015	-.01
546.	1.03	-.0904	.0218	-.0908	.0202	-4.49	.0136	.0015	.0015	1.03
547.	2.01	-.0502	.0189	-.0508	.0171	-2.96	.0102	.0015	.0015	2.01
548.	3.03	-.0039	.0155	-.0047	.0152	-.31	.0060	.0014	.0014	3.03
549.	3.50	.0171	.0137	.0163	.0147	1.10	.0034	.0014	.0014	3.50
550.	3.75	.0297	.0129	.0288	.0148	1.94	.0020	.0014	.0014	3.75
551.	3.99	.0398	.0120	.0388	.0147	2.63	.0007	.0014	.0014	3.99
552.	5.00	.0841	.0083	.0831	.0156	5.33	-.0036	.0014	.0014	5.00
553.	5.99	.1273	.0047	.1261	.0180	7.02	-.0080	.0013	.0013	5.99
554.	7.01	.1722	.0007	.1708	.0217	7.88	-.0123	.0013	.0013	7.01
555.	7.49	.1932	-.0014	.1917	.0238	8.05	-.0148	.0013	.0013	7.49
556.	8.01	.2147	-.0033	.2131	.0266	8.01	-.0168	.0013	.0013	8.01
557.	8.51	.2371	-.0054	.2353	.0297	7.92	-.0187	.0013	.0013	8.51
558.	9.02	.2594	-.0076	.2574	.0332	7.76	-.0210	.0012	.0012	9.02
559.	10.03	.3026	-.0120	.3000	.0409	7.34	-.0246	.0012	.0012	10.03
560.	11.01	.3446	-.0162	.3414	.0499	6.84	-.0284	.0012	.0012	11.01
561.	12.01	.3867	-.0207	.3825	.0603	6.35	-.0317	.0011	.0011	12.01
562.	13.03	.4283	-.0249	.4229	.0723	5.85	-.0350	.0011	.0011	13.03
563.	14.02	.4684	-.0290	.4615	.0853	5.41	-.0376	.0011	.0011	14.02

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE B3.- Continued

BASIC LEADING EDGE

TEST 1406. RUN 29. MACH 1.70

POINT	ALPHA, DEG	CN	CA	CL	CD	L/D	CM	CAC	CDC	ALPHA, DEG
565.	-.06	-.1326	.0247	-.1326	.0248	-5.34	.0163	.0015	.0015	-.06
566.	.94	-.0916	.0217	-.0919	.0202	-4.54	.0131	.0015	.0015	.94
567.	1.94	-.0510	.0188	-.0516	.0170	-3.03	.0101	.0015	.0015	1.94
568.	2.95	-.0075	.0155	-.0083	.0151	-.55	.0059	.0015	.0015	2.95
569.	3.48	.0164	.0137	.0155	.0146	1.06	.0034	.0015	.0015	3.48
570.	3.69	.0258	.0129	.0250	.0145	1.72	.0023	.0014	.0014	3.69
571.	3.96	.0373	.0121	.0364	.0146	2.49	.0011	.0014	.0014	3.96
572.	4.96	.0818	.0084	.0808	.0155	5.22	-.0035	.0014	.0014	4.96
573.	5.94	.1234	.0048	.1222	.0176	6.96	-.0080	.0014	.0013	5.94
574.	6.95	.1668	.0011	.1654	.0213	7.79	-.0119	.0013	.0013	6.95
575.	7.94	.2095	-.0029	.2079	.0261	7.97	-.0162	.0013	.0013	7.94
576.	8.45	.2300	-.0048	.2282	.0290	7.86	-.0180	.0013	.0013	8.45
577.	8.95	.2521	-.0068	.2501	.0325	7.69	-.0198	.0013	.0013	8.95
578.	9.94	.2921	-.0109	.2896	.0397	7.30	-.0237	.0012	.0012	9.94
579.	10.94	.3347	-.0151	.3315	.0487	6.81	-.0270	.0012	.0012	10.94
580.	11.93	.3760	-.0193	.3719	.0588	6.32	-.0307	.0012	.0012	11.93
581.	12.95	.4167	-.0236	.4113	.0704	5.84	-.0334	.0010	.0009	12.95
582.	13.96	.4570	-.0275	.4502	.0836	5.39	-.0360	.0009	.0009	13.96

TABLE B3.- Continued

ALTERNATE LEADING EDGE

TEST 1406. RUN 11. MACH 1.58

POINT	ALPHA, DEG	CN	CA	CL	CD	L/D	CM	CAC	CDC	ALPHA, DEG
214.	-.06	-.1390	.0242	-.1390	.0243	-5.71	.0179	.0015	.0015	-.06
215.	.94	-.0948	.0214	-.0951	.0198	-4.80	.0143	.0015	.0015	.94
216.	1.90	-.0508	.0184	-.0514	.0167	-3.08	.0100	.0015	.0015	1.90
217.	2.94	-.0021	.0149	-.0028	.0148	-.19	.0047	.0015	.0015	2.94
218.	3.39	.0172	.0134	.0163	.0144	1.13	.0028	.0014	.0014	3.39
219.	3.69	.0323	.0122	.0314	.0143	2.21	.0015	.0014	.0014	3.69
220.	3.95	.0459	.0112	.0450	.0143	3.15	.0000	.0014	.0014	3.95
221.	4.90	.0876	.0078	.0866	.0153	5.68	-.0040	.0014	.0014	4.90
222.	5.88	.1323	.0041	.1312	.0177	7.42	-.0082	.0014	.0014	5.88
223.	6.95	.1817	-.0003	.1804	.0217	8.31	-.0135	.0014	.0014	6.95
224.	7.40	.2027	-.0022	.2013	.0239	8.42	-.0157	.0014	.0013	7.40
225.	7.90	.2235	-.0041	.2219	.0267	8.32	-.0180	.0013	.0013	7.90
226.	8.39	.2462	-.0065	.2445	.0295	8.29	-.0206	.0013	.0013	8.39
227.	8.91	.2699	-.0087	.2680	.0332	8.07	-.0229	.0013	.0013	8.91
228.	9.92	.3154	-.0133	.3130	.0412	7.59	-.0276	.0013	.0013	9.92
229.	10.95	.3620	-.0180	.3589	.0511	7.03	-.0317	.0013	.0012	10.95
230.	11.91	.4038	-.0223	.3997	.0615	6.50	-.0353	.0012	.0012	11.91
231.	12.93	.4482	-.0268	.4428	.0741	5.97	-.0383	.0012	.0012	12.93
232.	13.92	.4901	-.0309	.4832	.0879	5.49	-.0416	.0012	.0012	13.92

TABLE B3.- Continued

ALTERNATE LEADING EDGE

TEST 1406. RUN 14. MACH 1.62

POINT	ALPHA, DEG	CN	CA	CL	CD	L/D	CM	CAC	CDC	ALPHA, DEG
259.	-.06	-.1369	.0238	-.1368	.0239	-5.72	.0179	.0014	.0014	-.06
260.	.96	-.0921	.0209	-.0924	.0194	-4.77	.0141	.0015	.0015	.96
261.	2.00	-.0451	.0176	-.0457	.0160	-2.86	.0097	.0014	.0014	2.00
262.	2.99	-.0002	.0144	-.0009	.0143	-.07	.0047	.0014	.0014	2.99
263.	3.42	.0181	.0129	.0173	.0140	1.24	.0025	.0014	.0014	3.42
264.	3.71	.0319	.0119	.0311	.0140	2.23	.0014	.0014	.0014	3.71
265.	4.01	.0475	.0107	.0467	.0140	3.35	-.0002	.0014	.0014	4.01
266.	4.98	.0908	.0073	.0898	.0152	5.93	-.0042	.0014	.0014	4.98
267.	5.94	.1321	.0038	.1310	.0175	7.49	-.0084	.0014	.0014	5.94
268.	6.95	.1775	-.0001	.1762	.0214	8.23	-.0132	.0014	.0013	6.95
269.	7.41	.1975	-.0019	.1961	.0236	8.32	-.0155	.0013	.0013	7.41
270.	7.95	.2223	-.0043	.2207	.0265	8.33	-.0178	.0013	.0013	7.95
271.	8.50	.2468	-.0066	.2451	.0300	8.17	-.0203	.0013	.0013	8.50
272.	9.00	.2692	-.0086	.2672	.0336	7.94	-.0227	.0013	.0013	9.00
273.	9.99	.3120	-.0130	.3095	.0413	7.49	-.0267	.0013	.0013	9.99
274.	10.99	.3565	-.0173	.3533	.0510	6.93	-.0307	.0012	.0012	10.99
275.	11.94	.3958	-.0213	.3916	.0610	6.42	-.0336	.0012	.0012	11.94
276.	12.98	.4396	-.0257	.4342	.0737	5.89	-.0369	.0012	.0012	12.98
277.	13.99	.4823	-.0300	.4752	.0875	5.43	-.0399	.0012	.0012	13.99

ORIGINAL PAGE IS OF POOR QUALITY

TABLE B3.- Continued

ALTERNATE LEADING EDGE

TEST 1406. RUN 15. MACH 1.66

POINT	ALPHA, DEG	CN	CA	CL	CD	L/D	CM	CAC	CDC	ALPHA, DEG
279.	.01	-.1323	.0234	-.1323	.0233	-5.67	.0175	.0015	.0015	.01
280.	.98	-.0909	.0206	-.0912	.0190	-4.80	.0141	.0015	.0015	.98
281.	2.03	-.0461	.0175	-.0467	.0158	-2.95	.0095	.0015	.0015	2.03
282.	3.00	-.0017	.0142	-.0025	.0141	-.18	.0050	.0014	.0014	3.00
283.	3.53	.0217	.0124	.0209	.0137	1.52	.0024	.0014	.0014	3.53
284.	3.74	.0314	.0118	.0306	.0138	2.21	.0012	.0014	.0014	3.74
285.	4.04	.0451	.0107	.0442	.0138	3.20	-.0001	.0014	.0014	4.04
286.	5.01	.0884	.0073	.0875	.0150	5.85	-.0044	.0014	.0014	5.01
287.	6.02	.1316	.0037	.1305	.0175	7.48	-.0084	.0014	.0014	6.02
288.	7.01	.1749	-.0000	.1736	.0213	8.15	-.0127	.0013	.0013	7.01
289.	7.52	.1978	-.0020	.1964	.0239	8.23	-.0152	.0013	.0013	7.52
290.	8.03	.2208	-.0042	.2192	.0267	8.20	-.0174	.0013	.0013	8.03
291.	8.49	.2397	-.0058	.2380	.0296	8.03	-.0197	.0013	.0013	8.49
292.	9.00	.2630	-.0081	.2611	.0332	7.86	-.0219	.0013	.0013	9.00
293.	10.01	.3059	-.0123	.3034	.0411	7.39	-.0258	.0013	.0012	10.01
294.	11.00	.3471	-.0164	.3439	.0502	6.85	-.0295	.0012	.0012	11.00
295.	11.98	.3890	-.0205	.3847	.0606	6.34	-.0325	.0012	.0012	11.98
296.	13.04	.4315	-.0247	.4260	.0733	5.81	-.0357	.0012	.0012	13.04
297.	13.98	.4694	-.0284	.4623	.0859	5.38	-.0382	.0012	.0011	13.98

TABLE B3.- Continued

ALTERNATF LEADING EDGE

TEST 1406. RUN 19. MACH 1.70

POINT	ALPHA, DEG	CN	CA	CL	CD	L/D	CM	CAC	CDC	ALPHA, DEG
340.	-.06	-.1332	.0239	-.1332	.0241	-5.53	.0176	.0015	.0015	-.06
341.	.97	-.0904	.0211	-.0908	.0195	-4.65	.0139	.0015	.0015	.97
342.	1.97	-.0473	.0182	-.0479	.0166	-2.89	.0099	.0015	.0015	1.97
343.	2.94	-.0066	.0152	-.0074	.0149	-.50	.0054	.0015	.0015	2.94
344.	3.42	.0151	.0136	.0142	.0145	.98	.0031	.0015	.0015	3.42
345.	3.70	.0284	.0127	.0275	.0145	1.90	.0017	.0015	.0014	3.70
346.	3.96	.0405	.0116	.0396	.0144	2.75	.0005	.0014	.0014	3.96
347.	4.97	.0842	.0082	.0832	.0155	5.37	-.0039	.0014	.0014	4.97
348.	5.95	.1262	.0047	.1250	.0178	7.04	-.0078	.0014	.0014	5.95
349.	6.94	.1685	.0013	.1671	.0216	7.72	-.0121	.0014	.0014	6.94
350.	7.45	.1913	-.0008	.1897	.0240	7.90	-.0142	.0014	.0013	7.45
351.	7.98	.2137	-.0027	.2120	.0269	7.87	-.0164	.0013	.0013	7.98
352.	8.47	.2359	-.0048	.2340	.0300	7.79	-.0184	.0013	.0013	8.47
353.	8.97	.2552	-.0066	.2531	.0333	7.60	-.0202	.0013	.0013	8.97
354.	9.95	.2973	-.0107	.2947	.0409	7.21	-.0242	.0013	.0012	9.95
355.	10.96	.3390	-.0147	.3356	.0500	6.71	-.0275	.0012	.0012	10.96
356.	11.93	.3785	-.0187	.3741	.0600	6.24	-.0306	.0012	.0012	11.93
357.	12.94	.4185	-.0225	.4129	.0718	5.75	-.0334	.0012	.0012	12.94
358.	13.94	.4580	-.0264	.4509	.0847	5.32	-.0361	.0012	.0012	13.94

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE B3.- Concluded

ALTERNATE LEADING EDGE

TEST 1406. RUN 20. MACH 2.00

POINT	ALPHA, DEG	CN	CA	CL	CD	L/D	CM	CAC	CDC	ALPHA, DEG
361.	-.17	-.1181	.0226	-.1180	.0229	-5.15	.0141	.0014	.0014	-.17
362.	.85	-.0830	.0201	-.0832	.0189	-4.40	.0118	.0014	.0014	.85
363.	1.82	-.0490	.0177	-.0495	.0161	-3.07	.0092	.0014	.0014	1.82
364.	2.83	-.0123	.0151	-.0130	.0145	-.90	.0061	.0014	.0014	2.83
365.	3.81	.0230	.0124	.0221	.0139	1.60	.0031	.0014	.0014	3.81
366.	4.84	.0629	.0093	.0619	.0146	4.24	-.0005	.0013	.0013	4.84
367.	5.84	.0999	.0065	.0987	.0166	5.95	-.0040	.0013	.0013	5.84
368.	7.86	.1737	.0005	.1720	.0242	7.10	-.0104	.0012	.0012	7.86
369.	9.82	.2437	-.0054	.2411	.0363	6.64	-.0156	.0012	.0012	9.82
370.	11.85	.3149	-.0115	.3106	.0534	5.81	-.0203	.0012	.0012	11.85
371.	13.82	.3814	-.0173	.3745	.0744	5.04	-.0245	.0012	.0011	13.82
372.	-.17	-.1174	.0225	-.1173	.0228	-5.14	.0143	.0014	.0014	-.17

EFFECT OF GRID DENSITY AND STEP SIZE ON NONLINEAR POTENTIAL THEORY (NCOREL) RESULTS

An important consideration for any finite-difference computer program is the number of grid points necessary to accurately resolve the given problems at minimum cost. In this appendix, the results of a systematic variation of grid-spacing parameters are presented. These results include plots of spanwise pressure distributions which compare NCOREL calculations with experimentally obtained data and a table of the integrated force and moment coefficients with computer execution times. The experimental force and moment data in the table are interpolated to $\alpha = 11.93°$, and the skin-friction axial force of 0.0069 has been removed.

The grid-spacing parameters assessed in this appendix are the grid density, which is held fixed for each two-dimensional cutting plane, and the spherical marching-step size DR, which is the distance between each two-dimensional cutting plane. The grid density is specified as $M \times N$ where M is the number of grid points on the body and N is the number of grid points from the body to the outer boundary (bow shock). The computational plane grid consists of evenly spaced grid points, but in the physical plane the grid points are concentrated near the leading edge to more accurately resolve the large leading-edge flow gradients. The NCOREL code marches implicitly along spherical cutting planes which are specified at increasing radii from the apex of the geometry. The implicit marching technique theoretically allows an infinitely large marching step (i.e., no bounds imposed by the CFL criterion), and the use of spherical cutting planes allows the code to be used at somewhat lower supersonic Mach numbers than would be the case if a Cartesian system were used. Without the bounds of the CFL criterion to limit the marching-step size, as is the case for explicit marching techniques for hyperbolic flow, the only restriction on the marching step is that it must be sufficiently small to accurately model the geometry.

In figure C1, computed pressures are compared with experimental data at $\alpha = 11.93°$ and $M = 1.62$ for three different grid densities and a 1-in. marching step. The increase in grid density from 15×15 to 29×29 strongly affects the calculated pressure distribution, especially around the leading edge where the gradients are strongest. Also, the resolution of the cross-flow shock is quite poor for the 15×15 grid. The effect of the increase in grid density from 29×29 to 57×57 is not as noticeable on the first two spanwise sections, which are relatively thick, but is apparent on the upper surface of the last two sections. In general, the effect of increasing the grid density is to provide more accurate spanwise pressure calculations and a sharper definition of the supercritical and subcritical cross-flow regions.

The effect of three marching-step sizes DR on the NCOREL pressure estimates is shown in figure C2 for a constant 57×57 grid density. The primary effect is a slightly improved cross-flow shock definition for decreasing step size. At the most aft spanwise section, the smallest step size provides the most accurate definition of the trailing edge, and the effect on the pressure distribution near the trailing edge is apparent.

APPENDIX C

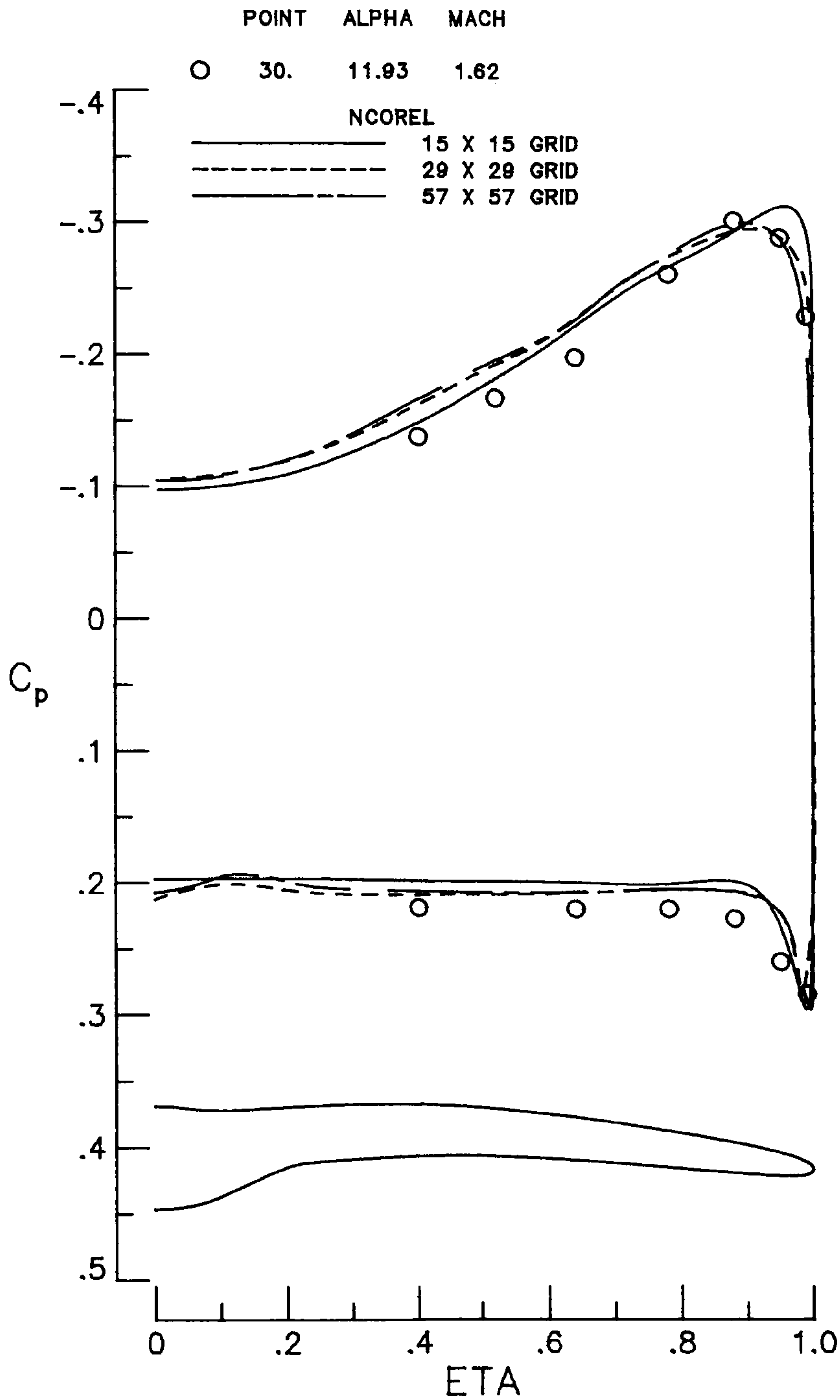
The integrated force and moment estimates are cataloged in table C1. The most expensive NCOREL case (DR = 0.5 in., 57 × 57 grid) does not necessarily agree best with the experimental data. As pointed out in the main body of this paper, this error is in large measure due to the disparity between the calculated isentropic cross-flow shock strength and the experimentally measured cross-flow shock strength. It is important to note that accurate force and moment estimates can be obtained for relatively small run times (DR = 1.0 in., 29 × 29 grid).

TABLE C1.- SUMMARY OF GRID DENSITY AND STEP-SIZE EFFECTS ON NCOREL FORCE AND MOMENT ESTIMATES AND EXECUTION TIMES

[Experiment interpolated to $\alpha = 11.93°$; $C_f = 0.0069$ removed]

Step size, in.	Grid size	C_N	C_A	C_L	C_D	C_m	CDC Cyber 175 CPU seconds
1.0	15 × 15	0.40334	-0.02881	0.40059	0.05520	-0.04148	134.7
1.0	29 × 29	.40300	-.02751	.39999	.05640	-.03928	339.5
1.0	57 × 57	.40558	-.02693	.40238	.05748	-.03974	1881.8
.5	57 × 57	.40394	-.02677	.40075	.05731	-.03887	3537.0
2.0	57 × 57	.40660	-.02711	.40342	.05752	-.04103	1718.1
Experiment		.3929	-.0285	.3903	.0533	-.0328	

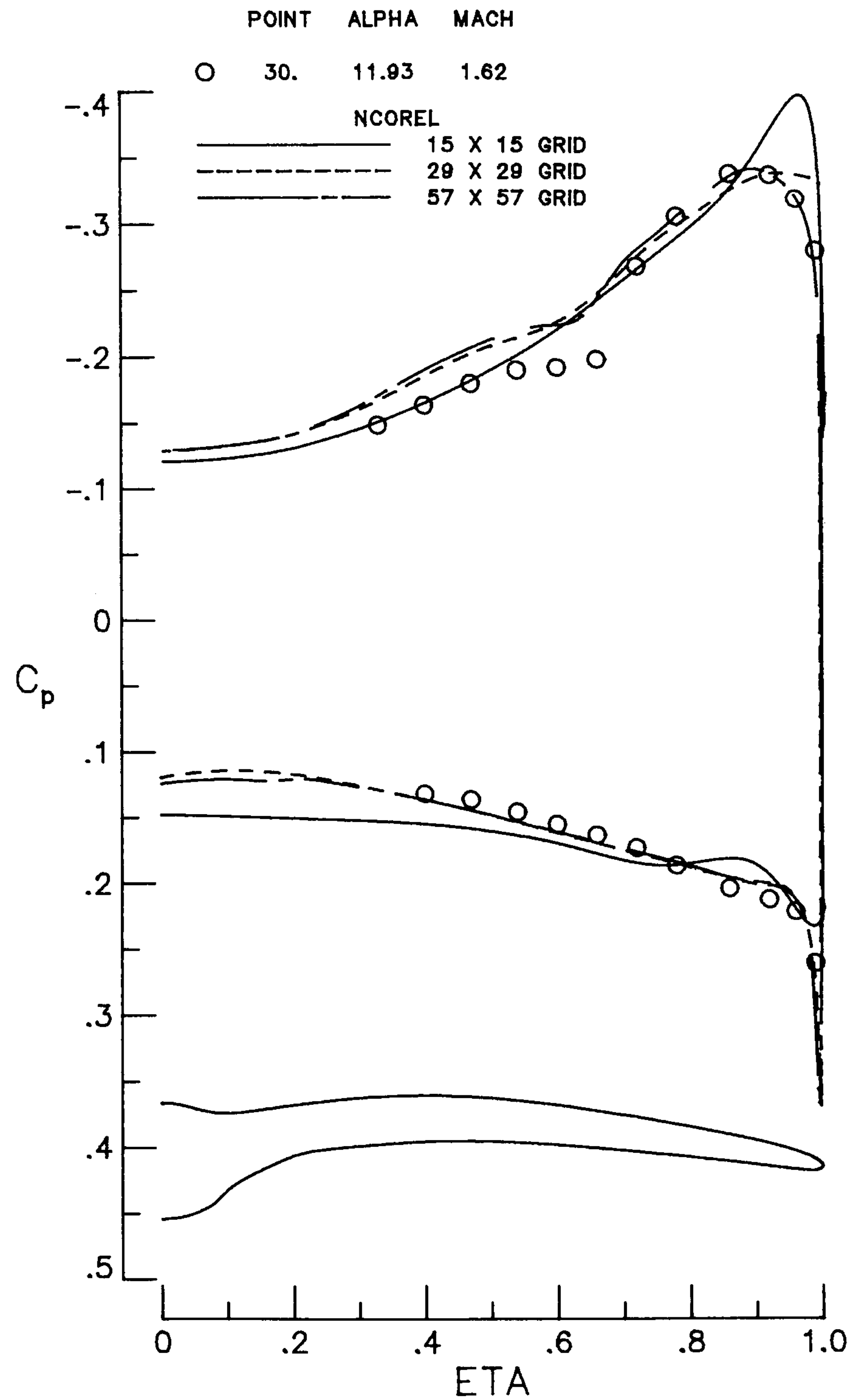
ORIGINAL PAGE IS
OF POOR QUALITY



(a) x = 10.6 in.

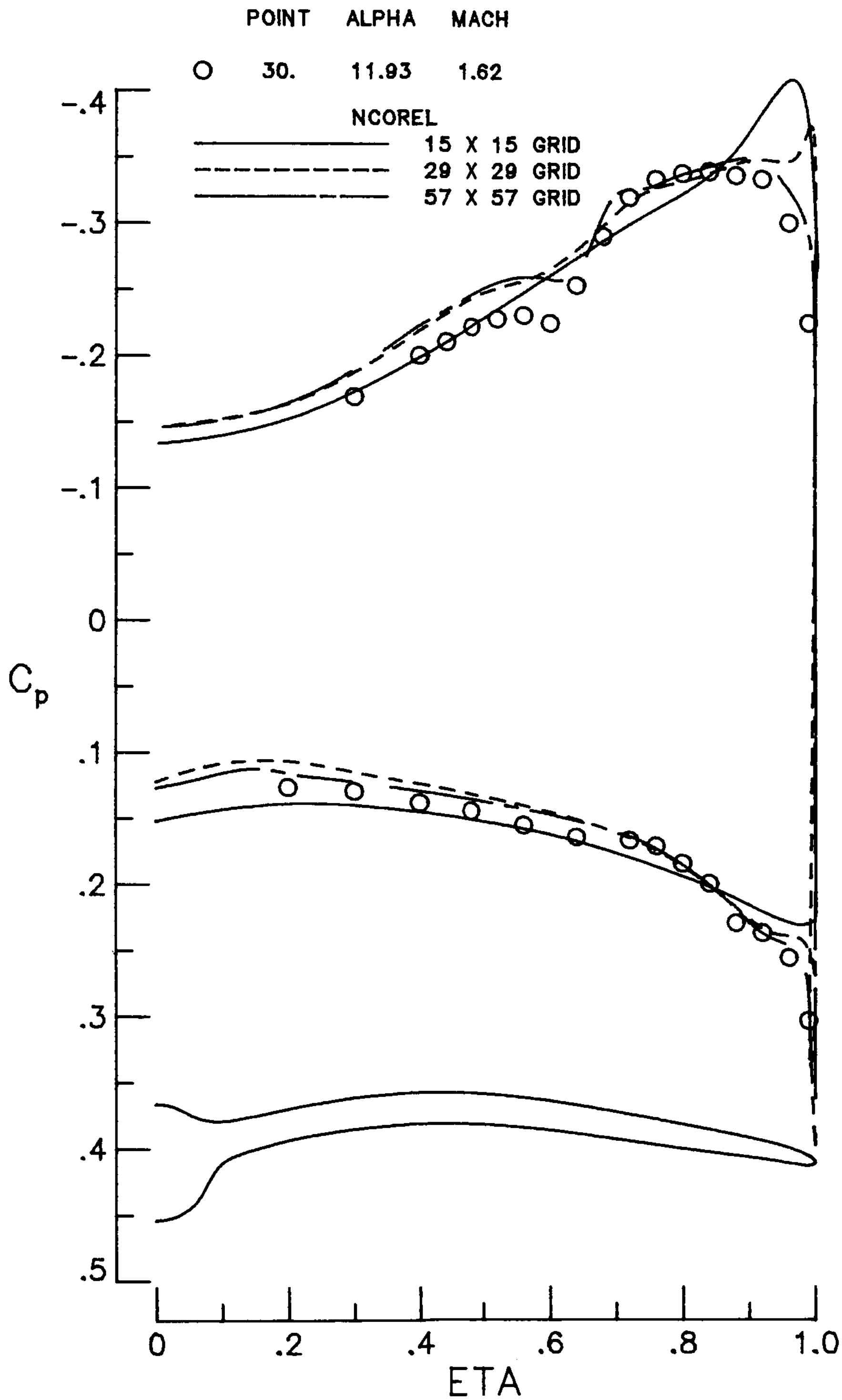
Figure C1.- Effect of grid density on calculated pressure coefficients for a constant 1.0-in. step size.

ORIGINAL PAGE IS
OF POOR QUALITY



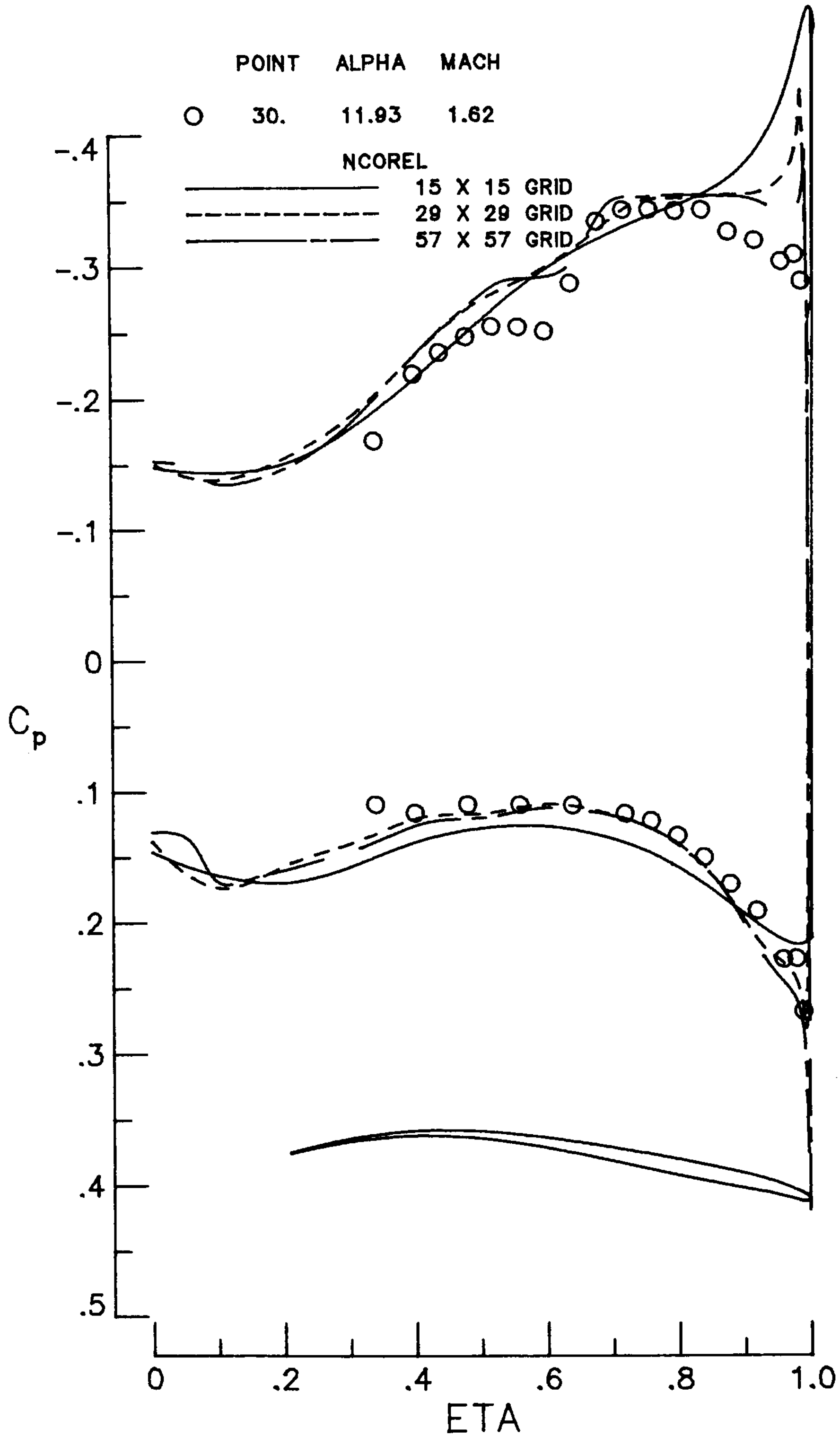
(b) x = 15.5 in.

Figure C1.- Continued.



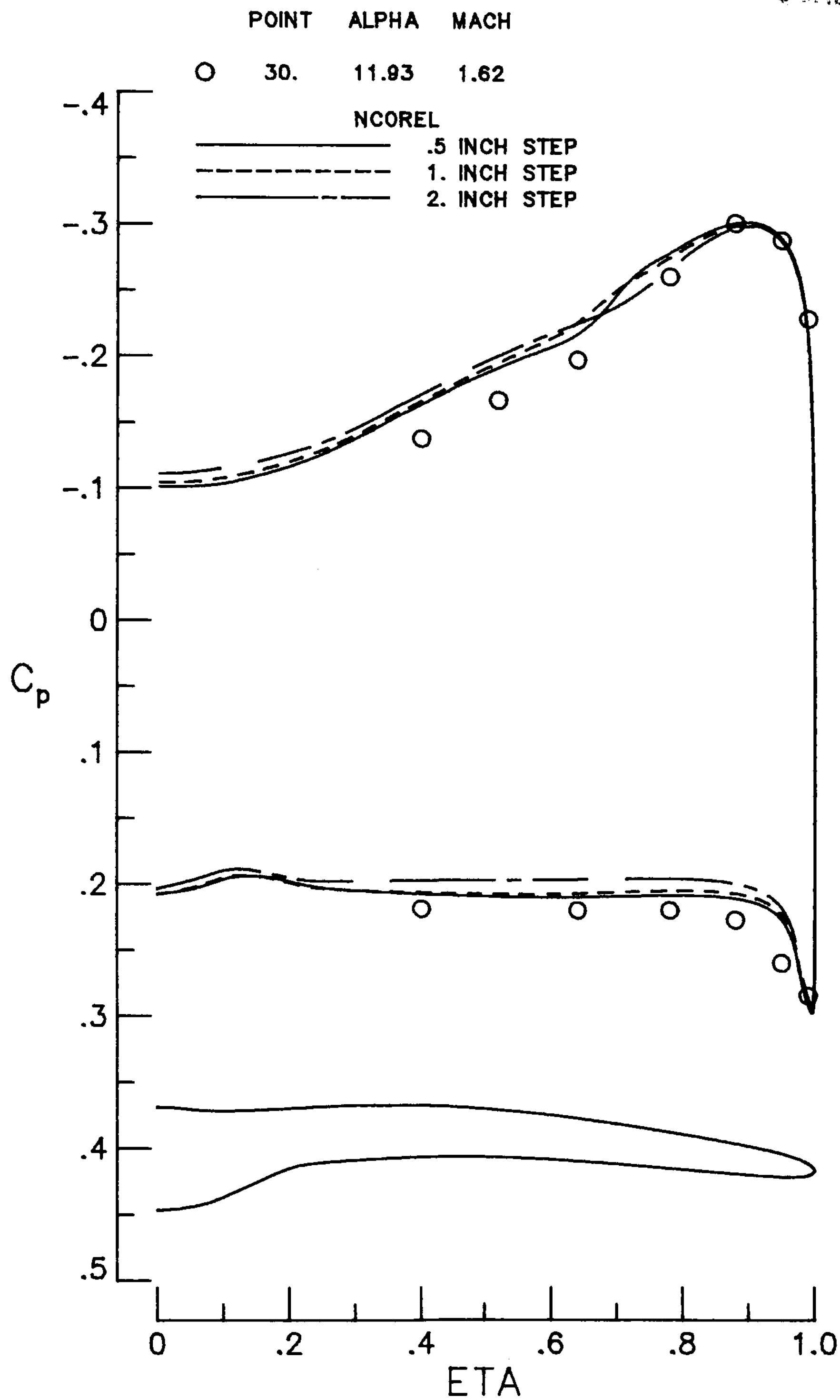
(c) x = 19.9 in.

Figure C1.- Continued.



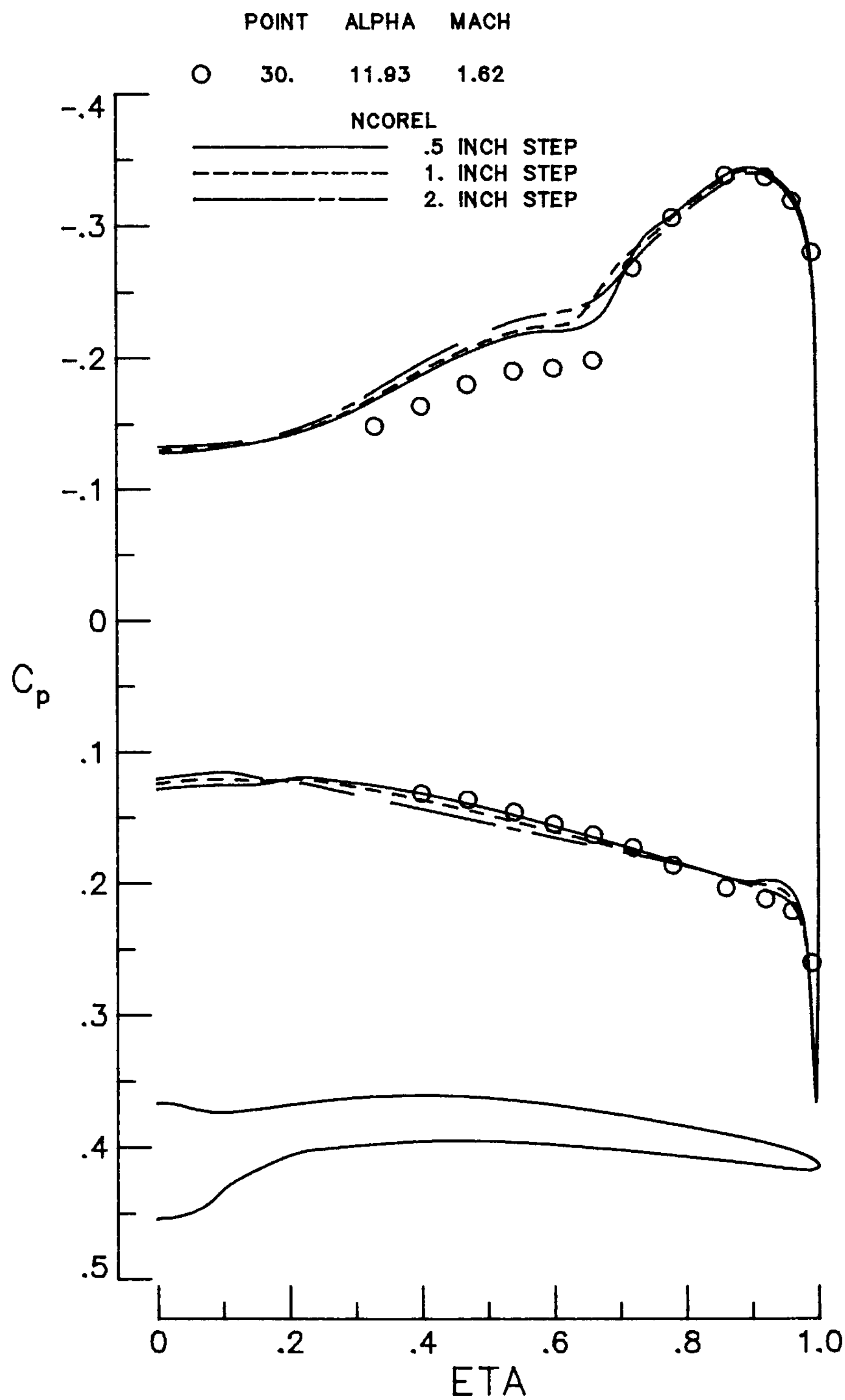
(d) x = 24.4 in.

Figure C1.- Concluded.



(a) x = 10.6 in.

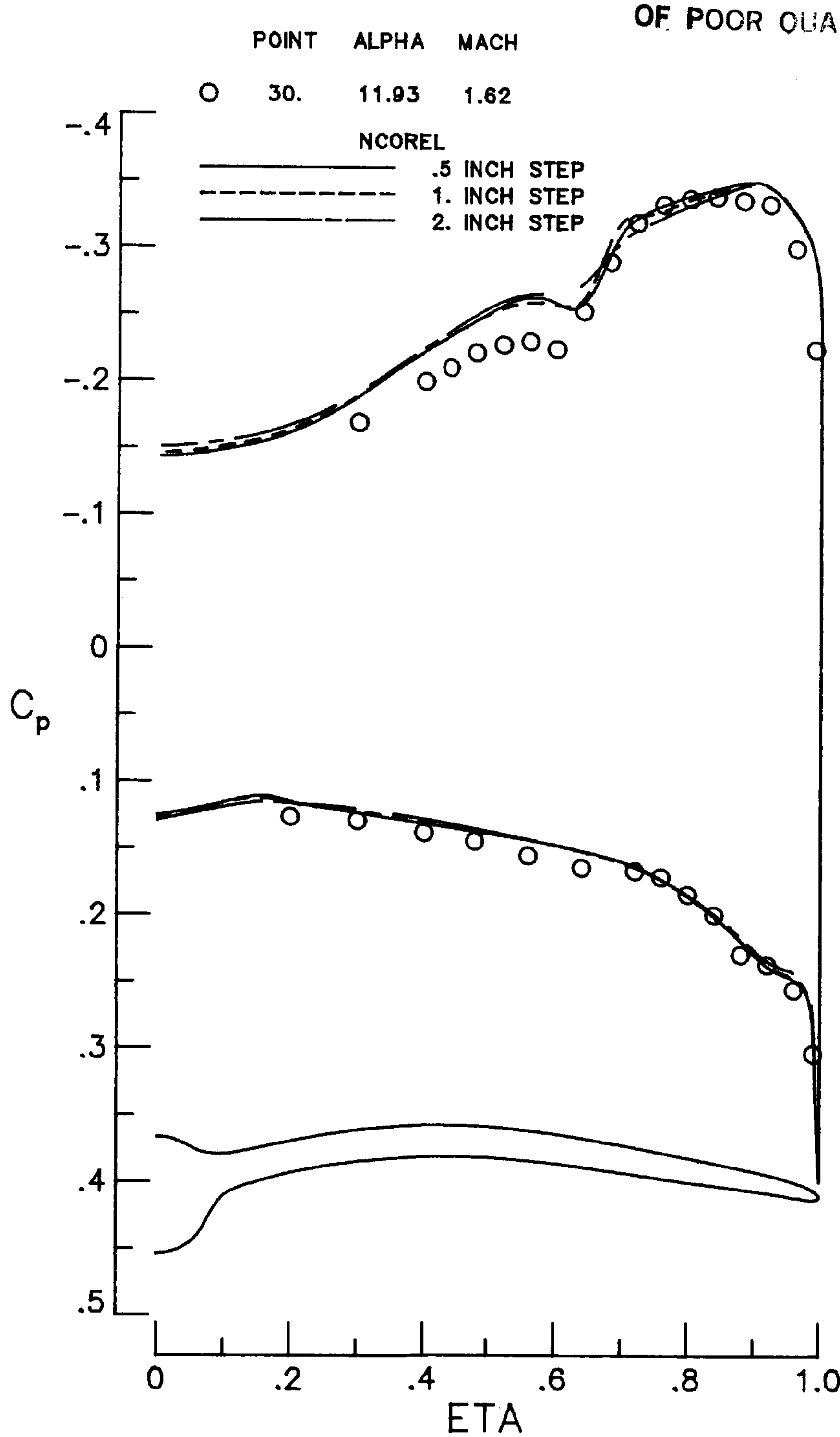
Figure C2.- Effect of step size on calculated pressure coefficients for a constant 57 × 57 grid density.



(b) x = 15.5 in.

Figure C2.- Continued.

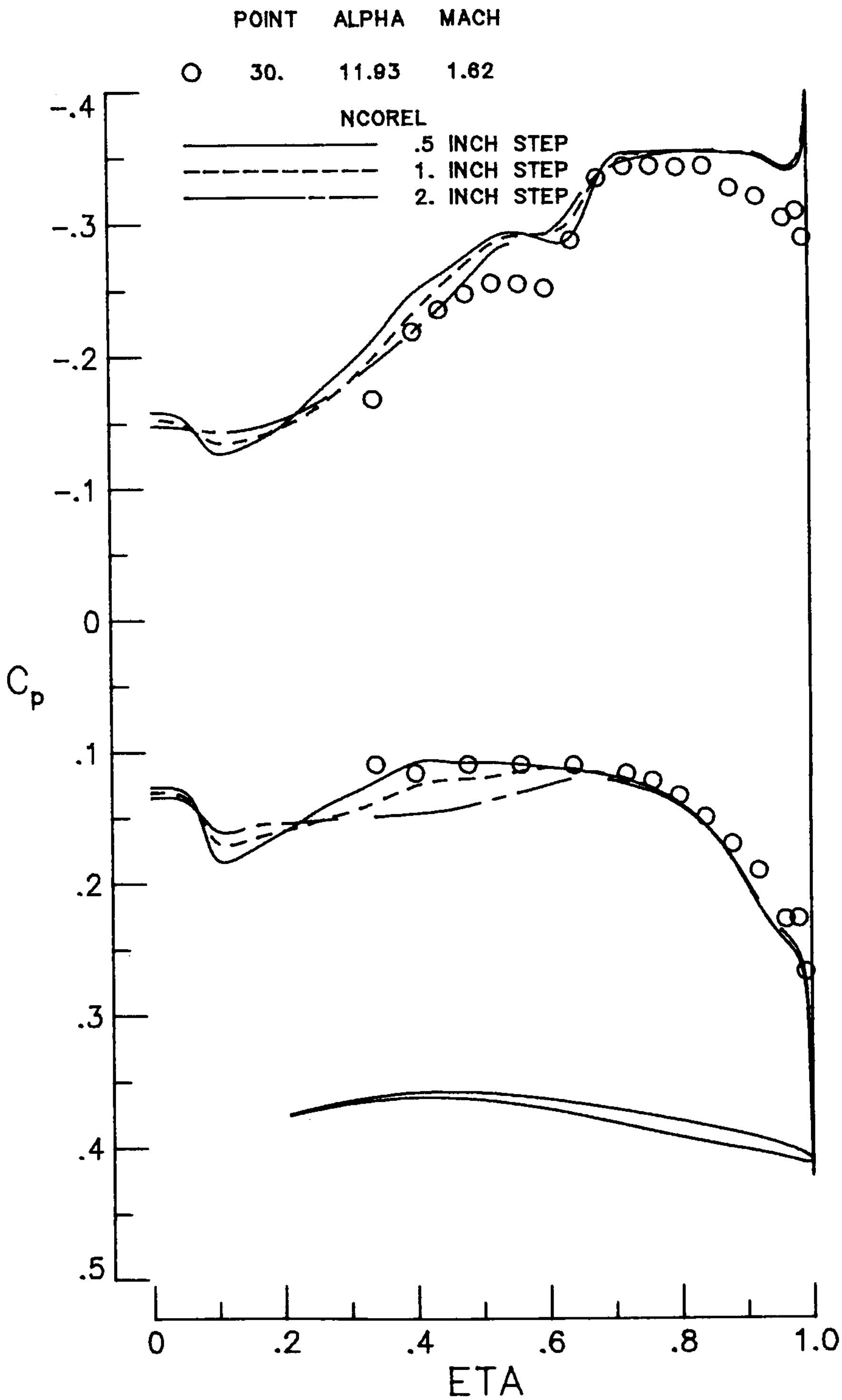
ORIGINAL PAGE IS
OF POOR QUALITY



(c) x = 19.9 in.

Figure C2.- Continued.

ORIGINAL PAGE IS
OF POOR QUALITY



(d) x = 24.4 in.

Figure C2.- Concluded.

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
NASA TP-2336		

4. Title and Subtitle
SUPERSONIC, NONLINEAR, ATTACHED-FLOW WING DESIGN FOR HIGH LIFT WITH EXPERIMENTAL VALIDATION

5. Report Date
August 1984

6. Performing Organization Code
505-43-23-02

7. Author(s)
James L. Pittman, David S. Miller, and William H. Mason

8. Performing Organization Report No.
L-15787

9. Performing Organization Name and Address
NASA Langley Research Center
Hampton, VA 23665

10. Work Unit No.

11. Contract or Grant No.

12. Sponsoring Agency Name and Address
National Aeronautics and Space Administration
Washington, DC 20546

13. Type of Report and Period Covered
Technical Paper

14. Sponsoring Agency Code

15. Supplementary Notes
James L. Pittman and David S. Miller: Langley Research Center, Hampton, Virginia.
William H. Mason: Grumman Aerospace Corporation, Bethpage, New York.

16. Abstract

A new concept for efficient supersonic maneuver has been applied to the design of a three-dimensional wing with a planform which was derived from advanced tactical-fighter studies. A wind-tunnel model of the wing was tested, and the design goals were realized. The concept focuses on the flow conditions in the cross-flow plane, where the flow is carefully controlled to expand without separation about a round leading edge and to then recompress through weak cross-flow shock waves. The basic idea is to generate high levels of lift using the low pressures associated with the upper-surface supercritical cross flow while minimizing drag by avoiding strong shocks which result in energy losses and boundary-layer separation. The experimental data showed overall excellent agreement with the design goals at the design condition of Mach 1.62 with a lift coefficient of 0.4 at 12° angle of attack. At the design point, the wing demonstrated a 21-percent decrease in drag due to lift compared with an equivalent flat wing. Tables of the experimental force, moment, and pressure data are included as appendixes to this report.

17. Key Words (Suggested by Author(s))
Supersonic flow
Maneuver lift
Attached flow
Full-potential method

18. Distribution Statement
[redacted]

[redacted]

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
Unclassified	Unclassified	221	

NASA-Langley, 1984